0077974

SAF-RC-088
618-7 Burial Ground – Other Liquids
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 6/18/08 Initials/Date
Kathy Wendt	H4-21	KW 6/18/08 Initials/Date

COMMENTS:

SDG K1230 SAF-RC-088

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
JUN 23 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

June 2, 2008

RECEIVED
JUN 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-05-177-7821, SDG K1230

Dear Ms. Kessner:

Enclosed is the data report for four liquid (other liquid) samples designated under SAF No. RC-088 received at Eberline Services on May 22, 2008. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1230 was composed of four liquid (other liquid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Liquids.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on May 30, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No other problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 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

06/02/08

Date

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1230

SDG	7821
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1230

SUMMARY DATA SECTION

TABLE OF CONTENTS

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	9
Lab Control Samples	10
Duplicates	11
Data Sheets	13
Method Summaries	17
Report Guides	25
End of Section	39

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/30/08

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.

SDG 7821
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

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 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
:ontact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

\B \MPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
305177-01	J16VC6	618-7 BurialGrnd (drums)	LIQUID		RC-088	RC-088-022	05/14/08 12:45
305177-02	J16VC7	618-7 BurialGrnd (drums)	LIQUID		RC-088	RC-088-022	05/14/08 13:20
305177-03	J16VC8	618-7 BurialGrnd (drums)	LIQUID		RC-088	RC-088-023	05/14/08 14:00
305177-04	J16VC9	618-7 BurialGrnd (drums)	LIQUID		RC-088	RC-088-023	05/14/08 14:35
305177-05	Lab Control Sample		LIQUID		RC-088		
305177-06	Method Blank		LIQUID		RC-088		
305177-07	Duplicate (R805177-02)	618-7 BurialGrnd (drums)	LIQUID		RC-088		05/14/08 13:20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

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
1	RC-088-022	J16VC6	LIQUID		487 mL		05/22/08	8	R805177-01	7821-001
		J16VC7	LIQUID		525 mL		05/22/08	8	R805177-02	7821-002
	RC-088-023	J16VC8	LIQUID		464 mL		05/22/08	8	R805177-03	7821-003
		J16VC9	LIQUID		482 mL		05/22/08	8	R805177-04	7821-004
		Method Blank	LIQUID						R805177-06	7821-006
		Lab Control Sample	LIQUID						R805177-05	7821-005
		Duplicate (R805177-02)	LIQUID		525 mL		05/22/08	8	R805177-07	7821-007

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	LIQUID	Americium 241 in Liquid	6148-149	8.0	4			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6148-149	8.0	4			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6148-149	8.0	4			1	1	1/1		
U	LIQUID	Uranium in Liquid	6148-149	8.0	4			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6148-149	10.4	4			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6148-149	20.6	4			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6148-149	11.0	4			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6148-149	7.0	4			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 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
:ontact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

SAMPLE ›LLECTED ›ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
;177-01	J16VC6			7821-001	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
)5/14/08	618-7 BurialGrnd (drums)		LIQUID	7821-001	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
)5/22/08	RC-088-022	RC-088		7821-001	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-001	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-001	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-001	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-001	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-001	U		05/29/08	05/29/08	BW	Uranium in Liquid
;177-02	J16VC7			7821-002	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
)5/14/08	618-7 BurialGrnd (drums)		LIQUID	7821-002	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
)5/22/08	RC-088-022	RC-088		7821-002	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-002	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-002	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-002	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-002	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-002	U		05/29/08	05/29/08	BW	Uranium in Liquid
;177-03	J16VC8			7821-003	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
)5/14/08	618-7 BurialGrnd (drums)		LIQUID	7821-003	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
)5/22/08	RC-088-023	RC-088		7821-003	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-003	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-003	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-003	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-003	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-003	U		05/29/08	05/29/08	BW	Uranium in Liquid
;177-04	J16VC9			7821-004	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
)5/14/08	618-7 BurialGrnd (drums)		LIQUID	7821-004	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
)5/22/08	RC-088-023	RC-088		7821-004	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-004	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-004	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-004	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-004	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-004	U		05/29/08	05/29/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

SAMPLE OLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
5177-05	Lab Control Sample			7821-005	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
			LIQUID	7821-005	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
		RC-088		7821-005	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-005	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-005	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-005	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-005	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-005	U		05/28/08	05/29/08	BW	Uranium in Liquid
5177-06	Method Blank			7821-006	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
			LIQUID	7821-006	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
		RC-088		7821-006	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-006	GAM		05/23/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-006	PU		05/29/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-006	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-006	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-006	U		05/28/08	05/29/08	BW	Uranium in Liquid
5177-07	Duplicate (R805177-02)			7821-007	93A/93		05/28/08	05/30/08	BW	Gross Alpha in Liquid
05/14/08	618-7 BurialGrnd (drums)		LIQUID	7821-007	93B/93		05/28/08	05/30/08	BW	Gross Beta in Liquid
05/22/08		RC-088		7821-007	AM		05/29/08	05/30/08	BW	Americium 241 in Liquid
				7821-007	GAM		05/27/08	05/30/08	CSS	Gamma Scan in Liquid
				7821-007	PU		05/30/08	05/30/08	BW	Plutonium-238,239/240, Liquid
				7821-007	SR		05/28/08	05/29/08	BW	Total Strontium in Liquids
				7821-007	TH		05/29/08	05/29/08	BW	Thorium, Isotopic in Liquid
				7821-007	U		05/28/08	05/29/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

SDG 7821
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

COUNTS OF TESTS BY SAMPLE TYPE

EST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
3A/93	RC-088	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	4			1	1	1	7
3B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	4			1	1	1	7
4	RC-088	Americium 241 in Liquid	AMCMISO_IE_PLATE_AEA	4			1	1	1	7
AM	RC-088	Gamma Scan in Liquid	GAMMA_GS	4			1	1	1	7
J	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	4			1	1	1	7
R	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	4			1	1	1	7
4	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	4			1	1	1	7
	RC-088	Uranium in Liquid	UISO_PLATE_AEA	4			1	1	1	7
OTALS				32			8	8	8	56

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-006 Method Blank

METHOD BLANK

SDG	7821	Client/Case no	Hanford	SDG K1230	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805177-06	Client sample id	Method Blank		
Dept sample id	7821-006	Material/Matrix		LIQUID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	1.79	3.3	5.84	10.0	U	93A
Gross Beta	12587-47-2	-1.43	3.6	6.31	15.0	U	93B
Total Strontium	SR-RAD	0.051	0.19	0.377	1.00	U	SR
Americium 241	14596-10-2	-0.032	0.19	0.389	1.00	U	AM
Thorium 228	14274-82-9	0.158	0.21	0.404	1.00	U	TH
Thorium 230	14269-63-7	-0.106	0.21	0.505	1.00	U	TH
Thorium 232	TH-232	0.106	0.11	0.404	1.00	U	TH
Uranium 233/234	U-233/234	0	0.055	0.210	1.00	U	U
Uranium 235	15117-96-1	0	0.067	0.255	1.00	U	U
Uranium 238	U-238	0	0.055	0.210	1.00	U	U
Plutonium 238	13981-16-3	0.156	0.19	0.238	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.062	0.238	1.00	U	PU
Potassium 40	13966-00-2	U		1.47		U	GAM
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.057	0.050	U	GAM
Radium 226	13982-63-3	U		0.115	0.100	U	GAM
Radium 228	15262-20-1	U		0.244	0.200	U	GAM
Europium 152	14683-23-9	U		0.144	0.100	U	GAM
Europium 154	15585-10-1	U		0.150	0.100	U	GAM
Europium 155	14391-16-3	U		0.138	0.100	U	GAM
Thorium 228	14274-82-9	U		0.083		U	GAM
Thorium 232	TH-232	U		0.244		U	GAM
Uranium 235	15117-96-1	U		0.236		U	GAM
Uranium 238	U-238	U		5.79		U	GAM
Americium 241	14596-10-2	U		0.209		U	GAM

618-7 Burial Ground-Other Liquids

QC-BLANK #65807

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-005 Lab Control Sample

LAB CONTROL SAMPLE

SDG 7821 Client/Case no Hanford SDG K1230
Contact Melissa C. Mannion Contract No. S00W235A00

Lab sample id R805177-05 Client sample id Lab Control Sample
Dept sample id 7821-005 Material/Matrix LIQUID
SAF No RC-088

ANALYTE	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ADDED pCi/mL	2σ ERR pCi/mL	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	130	18	6.09	10.0		93A	112	4.5	116	56-144	70-130
Gross Beta	111	8.0	5.51	15.0		93B	112	4.5	99	80-120	70-130
Total Strontium	10.9	0.59	0.246	1.00		SR	10.3	0.41	106	80-120	80-120
Americium 241	24.3	2.3	0.398	1.00		AM	22.4	0.90	108	79-121	80-120
Thorium 230	40.8	5.2	0.422	1.00		TH	41.6	1.7	98	77-123	80-120
Uranium 233/234	20.0	4.5	2.18	1.00		U	19.3	0.77	104	62-138	80-120
Uranium 235	16.3	4.0	1.02	1.00		U	15.7	0.63	104	59-141	80-120
Uranium 238	19.4	4.5	2.11	1.00		U	21.0	0.84	92	65-135	80-120
Plutonium 238	24.5	0.97	0.063	1.00		PU	25.8	1.0	95	86-114	80-120
Plutonium 239/240	27.7	1.1	0.042	1.00		PU	29.0	1.2	96	86-114	80-120
Cobalt 60	2.33	0.10	0.050	0.050		GAM	2.17	0.087	107	85-115	80-120
Cesium 137	2.42	0.084	0.061	0.050		GAM	2.34	0.094	103	86-114	80-120

618-7 Burial Ground-Other Liquids

QC-LCS #65806

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-007 J16VC7

DUPLICATE

SDG	7821	Client/Case no	Hanford SDG K1230
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R805177-07	Lab sample id	R805177-02
Dept sample id	7821-007	Dept sample id	7821-002
		Received	05/22/08
Client sample id	J16VC7		
Location/Matrix	618-7 BurialGrnd (drums) LIQUID		
Collected/Volume	05/14/08 13:20 525 mL		
Custody/SAF No	RC-088-022 RC-088		

ANALYTE	DUPLICATE pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ORIGINAL pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	-0.384	0.79	2.05	10.0	U	93A	0.604	1.2	2.23	U	-		1.4
Gross Beta	-0.656	2.6	4.71	15.0	U	93B	-0.714	2.8	5.02	U	-		0
Total Strontium	-0.052	0.14	0.294	1.00	U	SR	-0.001	0.16	0.309	U	-		0.5
Americium 241	0.158	0.21	0.292	1.00	U	AM	0	0.14	0.270	U	-		1.2
Thorium 228	0.378	0.33	0.518	1.00	U	TH	-0.042	0.17	0.462	U	-		2.3
Thorium 230	0	0.22	0.413	1.00	U	TH	0	0.17	0.319	U	-		0
Thorium 232	0.054	0.11	0.413	1.00	U	TH	0	0.083	0.319	U	-		0.8
Uranium 233/234	0.048	0.048	0.183	1.00	U	U	0	0.041	0.156	U	-		1.5
Uranium 235	0.029	0.058	0.222	1.00	U	U	0	0.049	0.189	U	-		0.8
Uranium 238	0	0.048	0.183	1.00	U	U	0	0.041	0.156	U	-		0
Plutonium 238	-0.042	0.17	0.464	1.00	U	PU	0	0.061	0.115	U	-		0.5
Plutonium 239/240	0.042	0.084	0.321	1.00	U	PU	0.066	0.041	0.056		44	260	0.5
Potassium 40	U		1.30		U	GAM	U		1.35	U	-		0.1
Cobalt 60	U		0.053	0.050	U	GAM	U		0.053	U	-		0
Cesium 137	U		0.054	0.050	U	GAM	U		0.050	U	-		0.1
Radium 226	U		0.096	0.100	U	GAM	U		0.119	U	-		0.3
Radium 228	U		0.235	0.200	U	GAM	U		0.224	U	-		0.1
Europium 152	U		0.135	0.100	U	GAM	U		0.131	U	-		0
Europium 154	U		0.149	0.100	U	GAM	U		0.159	U	-		0.1
Europium 155	U		0.119	0.100	U	GAM	U		0.110	U	-		0.1
Thorium 228	U		0.149		U	GAM	U		0.080	U	-		0.8
Thorium 232	U		0.235		U	GAM	U		0.224	U	-		0.1
Uranium 235	U		0.202		U	GAM	U		0.205	U	-		0
Uranium 238	U		7.30		U	GAM	U		5.90	U	-		0.3
Americium 241	U		0.199		U	GAM	U		0.099	U	-		0.9

618-7 Burial Ground-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-007 J16VC7

DUPLICATE, cont.

SDG	7821			Client/Case no	Hanford SDG K1230
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R805177-07	Lab sample id	R805177-02	Client sample id	J16VC7
Dept sample id	7821-007	Dept sample id	7821-002	Location/Matrix	618-7 BurialGrnd (drums) LIQUID
		Received	05/22/08	Collected/Volume	05/14/08 13:20 525 mL
				Custody/SAF No	RC-088-022 RC-088

QC-DUP#2 65808

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-001 J16VC6

DATA SHEET

SDG	7821	Client/Case no	Hanford	SDG_K1230	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805177-01	Client sample id	J16VC6		
Dept sample id	7821-001	Location/Matrix	618-7 BurialGrnd (drums)	LIQUID	
Received	05/22/08	Collected/Volume	05/14/08 12:45	487 mL	
		Custody/SAF No	RC-088-022	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.255	0.94	2.20	10.0	U	93A
Gross Beta	12587-47-2	-0.842	2.9	5.10	15.0	U	93B
Total Strontium	SR-RAD	-0.022	0.11	0.195	1.00	U	SR
Americium 241	14596-10-2	0.156	0.25	0.449	1.00	U	AM
Thorium 228	14274-82-9	-0.052	0.21	0.494	1.00	U	TH
Thorium 230	14269-63-7	-0.154	0.21	0.493	1.00	U	TH
Thorium 232	TH-232	0	0.10	0.394	1.00	U	TH
Uranium 233/234	U-233/234	0.019	0.076	0.146	1.00	U	U
Uranium 235	15117-96-1	0	0.046	0.177	1.00	U	U
Uranium 238	U-238	0.019	0.038	0.146	1.00	U	U
Plutonium 238	13981-16-3	0.032	0.065	0.110	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.009	0.035	1.00	U	PU
Potassium 40	13966-00-2	U		0.592		U	GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.029	0.050	U	GAM
Radium 226	13982-63-3	U		0.063	0.100	U	GAM
Radium 228	15262-20-1	U		0.134	0.200	U	GAM
Europium 152	14683-23-9	U		0.087	0.100	U	GAM
Europium 154	15585-10-1	U		0.079	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	U		0.056		U	GAM
Thorium 232	TH-232	U		0.134		U	GAM
Uranium 235	15117-96-1	U		0.130		U	GAM
Uranium 238	U-238	U		3.27		U	GAM
Americium 241	14596-10-2	U		0.071		U	GAM

618-7 Burial Ground-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-002 J16VC7

DATA SHEET

SDG	7821	Client/Case no	Hanford	SDG K1230	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805177-02	Client sample id	J16VC7		
Dept sample id	7821-002	Location/Matrix	618-7 BurialGrnd (drums)	LIQUID	
Received	05/22/08	Collected/Volume	05/14/08 13:20	525 mL	
		Custody/SAF No	RC-088-022	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.604	1.2	2.23	10.0	U	93A
Gross Beta	12587-47-2	-0.714	2.8	5.02	15.0	U	93B
Total Strontium	SR-RAD	-0.001	0.16	0.309	1.00	U	SR
Americium 241	14596-10-2	0	0.14	0.270	1.00	U	AM
Thorium 228	14274-82-9	-0.042	0.17	0.462	1.00	U	TH
Thorium 230	14269-63-7	0	0.17	0.319	1.00	U	TH
Thorium 232	TH-232	0	0.083	0.319	1.00	U	TH
Uranium 233/234	U-233/234	0	0.041	0.156	1.00	U	U
Uranium 235	15117-96-1	0	0.049	0.189	1.00	U	U
Uranium 238	U-238	0	0.041	0.156	1.00	U	U
Plutonium 238	13981-16-3	0	0.061	0.115	1.00	U	PU
Plutonium 239/240	PU-239/240	0.066	0.041	0.056	1.00		PU
Potassium 40	13966-00-2	U		1.35		U	GAM
Cobalt 60	10198-40-0	U		0.053	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.050	U	GAM
Radium 226	13982-63-3	U		0.119	0.100	U	GAM
Radium 228	15262-20-1	U		0.224	0.200	U	GAM
Europium 152	14683-23-9	U		0.131	0.100	U	GAM
Europium 154	15585-10-1	U		0.159	0.100	U	GAM
Europium 155	14391-16-3	U		0.110	0.100	U	GAM
Thorium 228	14274-82-9	U		0.080		U	GAM
Thorium 232	TH-232	U		0.224		U	GAM
Uranium 235	15117-96-1	U		0.205		U	GAM
Uranium 238	U-238	U		5.90		U	GAM
Americium 241	14596-10-2	U		0.099		U	GAM

618-7 Burial Ground-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-003 J16VC8

DATA SHEET

SDG	7821	Client/Case no	Hanford	SDG K1230	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805177-03	Client sample id	J16VC8		
Dept sample id	7821-003	Location/Matrix	618-7 BurialGrnd (drums)	LIQUID	
Received	05/22/08	Collected/Volume	05/14/08 14:00	464 mL	
		Custody/SAF No	RC-088-023	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.094	1.1	2.36	10.0	U	93A
Gross Beta	12587-47-2	0.683	3.4	5.71	15.0	U	93B
Total Strontium	SR-RAD	0.081	0.20	0.397	1.00	U	SR
Americium 241	14596-10-2	0	0.13	0.241	1.00	U	AM
Thorium 228	14274-82-9	0.089	0.27	0.598	1.00	U	TH
Thorium 230	14269-63-7	0.045	0.18	0.341	1.00	U	TH
Thorium 232	TH-232	0	0.089	0.341	1.00	U	TH
Uranium 233/234	U-233/234	0.154	0.10	0.131	1.00		U
Uranium 235	15117-96-1	0.021	0.042	0.159	1.00	U	U
Uranium 238	U-238	0.137	0.10	0.131	1.00		U
Plutonium 238	13981-16-3	0.011	0.055	0.098	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.022	0.053	1.00	U	PU
Potassium 40	13966-00-2	U		0.672		U	GAM
Cobalt 60	10198-40-0	U		0.040	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.050	U	GAM
Radium 226	13982-63-3	U		0.067	0.100	U	GAM
Radium 228	15262-20-1	U		0.161	0.200	U	GAM
Europium 152	14683-23-9	U		0.094	0.100	U	GAM
Europium 154	15585-10-1	U		0.108	0.100	U	GAM
Europium 155	14391-16-3	U		0.084	0.100	U	GAM
Thorium 228	14274-82-9	U		0.054		U	GAM
Thorium 232	TH-232	U		0.161		U	GAM
Uranium 235	15117-96-1	U		0.142		U	GAM
Uranium 238	U-238	U		4.62		U	GAM
Americium 241	14596-10-2	U		0.141		U	GAM

618-7 Burial Ground-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

7821-004 J16VC9

DATA SHEET

SDG	7821	Client/Case no	Hanford SDG K1230
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805177-04	Client sample id	J16VC9
Dept sample id	7821-004	Location/Matrix	618-7 BurialGrnd (drums) LIQUID
Received	05/22/08	Collected/Volume	05/14/08 14:35 482 mL
		Custody/SAF No	RC-088-023 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.337	0.53	1.75	10.0	U	93A
Gross Beta	12587-47-2	-1.69	4.7	7.88	15.0	U	93B
Total Strontium	SR-RAD	-0.103	0.15	0.318	1.00	U	SR
Americium 241	14596-10-2	-0.024	0.067	0.119	1.00	U	AM
Thorium 228	14274-82-9	0.340	0.29	0.371	1.00	U	TH
Thorium 230	14269-63-7	0.194	0.29	0.371	1.00	U	TH
Thorium 232	TH-232	0.097	0.097	0.371	1.00	U	TH
Uranium 233/234	U-233/234	0.038	0.038	0.146	1.00	U	U
Uranium 235	15117-96-1	0	0.046	0.177	1.00	U	U
Uranium 238	U-238	0.019	0.038	0.146	1.00	U	U
Plutonium 238	13981-16-3	-0.016	0.042	0.093	1.00	U	PU
Plutonium 239/240	PU-239/240	0.016	0.021	0.040	1.00	U	PU
Potassium 40	13966-00-2	U		1.98		U	GAM
Cobalt 60	10198-40-0	U		0.069	0.050	U	GAM
Cesium 137	10045-97-3	U		0.069	0.050	U	GAM
Radium 226	13982-63-3	U		0.164	0.100	U	GAM
Radium 228	15262-20-1	U		0.326	0.200	U	GAM
Europium 152	14683-23-9	U		0.190	0.100	U	GAM
Europium 154	15585-10-1	U		0.209	0.100	U	GAM
Europium 155	14391-16-3	U		0.160	0.100	U	GAM
Thorium 228	14274-82-9	U		0.122		U	GAM
Thorium 232	TH-232	U		0.326		U	GAM
Uranium 235	15117-96-1	U		0.300		U	GAM
Uranium 238	U-238	U		8.03		U	GAM
Americium 241	14596-10-2	U		0.065		U	GAM

618-7 Burial Ground-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test AM Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
paration batch 6148-149						
5177-01			7821-001	J16VC6	U	
5177-02			7821-002	J16VC7	U	
5177-03			7821-003	J16VC8	U	
5177-04			7821-004	J16VC9	U	
5177-05			7821-005	Lab Control Sample	ok	
5177-06			7821-006	Method Blank	U	
5177-07			7821-007	Duplicate (R805177-02)	-	U

inal values and limits from method RDLs (pCi/mL) 1.00
-7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 142													
5177-01			J16VC6	0.449	0.529			47		146			15	05/29/08	05/29	SS-036
5177-02			J16VC7	0.270	0.549			55		146			15	05/29/08	05/29	SS-040
5177-03			J16VC8	0.241	0.508			57		146			15	05/29/08	05/29	SS-042
5177-04			J16VC9	0.119	0.546			53		856			15	05/29/08	05/29	SS-056
5177-05			Lab Control Sample	0.398	0.500			33		317				05/29/08	05/29	SS-062
5177-06			Method Blank	0.389	0.500			54		148				05/29/08	05/29	SS-028
5177-07			Duplicate (R805177-02)	0.292	0.549			57		146			15	05/29/08	05/29	SS-038
inal values and limits from method				1.00	0.500			20-105		50	100		180			

ROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 7 SAMPLES
MDA 0.308 ± 0.226
YIELD 51 ± 17

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test PU Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
paration batch 6148-149								
5177-01			7821-001	J16VC6	U		U	
5177-02			7821-002	J16VC7	U		0.066	
5177-03			7821-003	J16VC8	U		U	
5177-04			7821-004	J16VC9	U		U	
5177-05			7821-005	Lab Control Sample	ok		ok	
5177-06			7821-006	Method Blank	U		U	
5177-07			7821-007	Duplicate (R805177-02)	-	U	ok	U
inal values and limits from method				RDLs (pCi/mL)	1.00		1.00	

-7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 142													
5177-01			J16VC6	0.110	0.529			56		852			15	05/29/08	05/29	SS-061
5177-02			J16VC7	0.115	0.549			58		852			15	05/29/08	05/29	SS-062
5177-03			J16VC8	0.098	0.508			61		851			15	05/29/08	05/29	SS-063
5177-04			J16VC9	0.093	0.546			47		852			15	05/29/08	05/29	SS-064
5177-05			Lab Control Sample	0.063	0.500			70		852				05/29/08	05/29	SS-065
5177-06			Method Blank	0.238	0.500			64		114				05/29/08	05/29	SS-037
5177-07			Duplicate (R805177-02)	0.464	0.549			46		114			16	05/29/08	05/30	SS-038
nal values and limits from method				1.00	0.500			20-105		50			180			

ROCEDURES	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 7 SAMPLES
MDA 0.169 ± 0.283
YIELD 57 ± 17

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test TH Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
paration batch 6148-149					
5177-01			7821-001	J16VC6	U
5177-02			7821-002	J16VC7	U
5177-03			7821-003	J16VC8	U
5177-04			7821-004	J16VC9	U
5177-05			7821-005	Lab Control Sample	ok
5177-06			7821-006	Method Blank	U
5177-07			7821-007	Duplicate (R805177-02)	- U

inal values and limits from method RDLs (pCi/mL) 1.00
-7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 142													
5177-01			J16VC6	0.494	0.264			83		118			15	05/29/08	05/29	SS-042
5177-02			J16VC7	0.462	0.275			80		119			15	05/29/08	05/29	SS-027
5177-03			J16VC8	0.598	0.254			88		118			15	05/29/08	05/29	SS-035
5177-04			J16VC9	0.371	0.273			72		118			15	05/29/08	05/29	SS-037
5177-05			Lab Control Sample	0.422	0.250			74		118				05/29/08	05/29	SS-038
5177-06			Method Blank	0.505	0.250			87		118				05/29/08	05/29	SS-031
5177-07			Duplicate (R805177-02)	0.518	0.275			76		119			15	05/29/08	05/29	SS-032
inal values and limits from method				1.00	0.250			20-110		100	100		180			

ROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD MDA 0.481 ± 0.145
FOR 7 SAMPLES YIELD 80 ± 13

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test U Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE 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
paration batch 6148-149											
5177-01			7821-001	J16VC6	U	U	U				
5177-02			7821-002	J16VC7	U	U	U				
5177-03			7821-003	J16VC8	0.154	U	0.137	112	110	15	33
5177-04			7821-004	J16VC9	U	U	U				
5177-05			7821-005	Lab Control Sample	ok	ok	ok				
5177-06			7821-006	Method Blank	U	U	U				
5177-07			7821-007	Duplicate (R805177-02)	- U	- U	- U				
inal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
-7 Burial Ground-Other Liquids								Averages 112		15	

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 8.0 %	Reference Lab Notebook #6148, pg. 142												
5177-01			J16VC6	0.177	0.529			92		147			15	05/27/08	05/29	SS-031
5177-02			J16VC7	0.189	0.549			81		147			15	05/27/08	05/29	SS-032
5177-03			J16VC8	0.159	0.508			90		147			15	05/27/08	05/29	SS-033
5177-04			J16VC9	0.177	0.546			90		147			15	05/27/08	05/29	SS-034
5177-05			Lab Control Sample	2.18	0.500			22		108				05/27/08	05/28	SS-060
5177-06			Method Blank	0.255	0.500			87		109				05/27/08	05/28	SS-065
5177-07			Duplicate (R805177-02)	0.222	0.549			96		109			14	05/27/08	05/28	SS-066
inal values and limits from method				1.00	0.500					100			180			

ROCEDURES	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 7 SAMPLES
MDA 0.480 ± 1.50
YIELD 80 ± 52

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test SR Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
paration batch 6148-149						
5177-01			7821-001	J16VC6	U	
5177-02			7821-002	J16VC7	U	
5177-03			7821-003	J16VC8	U	
5177-04			7821-004	J16VC9	U	
5177-05			7821-005	Lab Control Sample	ok	
5177-06			7821-006	Method Blank	U	
5177-07			7821-007	Duplicate (R805177-02)	-	U

inal values and limits from method RDLs (pCi/mL) 1.00
-7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 142													
5177-01			J16VC6	0.195	1.06			93		200			14	05/28/08	05/28	GRB-224
5177-02			J16VC7	0.309	1.10			91		100			14	05/28/08	05/28	GRB-225
5177-03			J16VC8	0.397	1.02			87		100			14	05/28/08	05/28	GRB-220
5177-04			J16VC9	0.318	1.09			85		100			14	05/28/08	05/28	GRB-227
5177-05			Lab Control Sample	0.246	1.00			96		100				05/28/08	05/28	GRB-221
5177-06			Method Blank	0.377	1.00			91		100				05/28/08	05/28	GRB-223
5177-07			Duplicate (R805177-02)	0.294	1.10			91		100			14	05/28/08	05/28	GRB-207
inal values and limits from method				1.00	1.00					100			180			

ROCEDURES	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 MDA 0.305 ± 0.140
FOR 7 SAMPLES YIELD 91 ± 7

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test 93A Matrix LIQUID
SDG 7821
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

›LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
›aration batch 6148-149						
;177-01	93		7821-001	J16VC6	U	
;177-02	93		7821-002	J16VC7	U	
;177-03	93		7821-003	J16VC8	U	
;177-04	93		7821-004	J16VC9	U	
;177-05	93		7821-005	Lab Control Sample	ok	
;177-06	93		7821-006	Method Blank	U	
;177-07	93		7821-007	Duplicate (R805177-02)	-	U

inal values and limits from method RDLs (pCi/mL) 10.0
-7 Burial Ground-Other Liquids

;THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
›aration batch 6148-149			2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 142													
5177-01	93		J16VC6	2.20	0.106			1		100			14	05/27/08	05/28	GRB-112
5177-02	93		J16VC7	2.23	0.110			1		100			14	05/27/08	05/28	GRB-211
5177-03	93		J16VC8	2.36	0.102			2		100			14	05/27/08	05/28	GRB-105
5177-04	93		J16VC9	1.75	0.109			1		100			14	05/27/08	05/28	GRB-107
5177-05	93		Lab Control Sample	6.09	0.100			61		100				05/27/08	05/28	GRB-109
5177-06	93		Method Blank	5.84	0.100			62		100				05/27/08	05/28	GRB-110
5177-07	93		Duplicate (R805177-02)	2.05	0.110			1		100			14	05/27/08	05/28	GRB-111
inal values and limits from method				10.0	0.100			5-250		100			180			

ROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-120	Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD MDA 3.22 ± 3.78
FOR 7 SAMPLES RESIDUE 18 ± 59

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test 93B Matrix LIQUID
SDG 7821
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
paration batch 6148-149						
5177-01	93		7821-001	J16VC6	U	
5177-02	93		7821-002	J16VC7	U	
5177-03	93		7821-003	J16VC8	U	
5177-04	93		7821-004	J16VC9	U	
5177-05	93		7821-005	Lab Control Sample	ok	
5177-06	93		7821-006	Method Blank	U	
5177-07	93		7821-007	Duplicate (R805177-02)	-	U

inal values and limits from method RDLs (pCi/mL) 15.0
-7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 142													
5177-01	93		J16VC6	5.10	0.106			1		100			14	05/27/08	05/28	GRB-112
5177-02	93		J16VC7	5.02	0.110			1		100			14	05/27/08	05/28	GRB-211
5177-03	93		J16VC8	5.71	0.102			2		100			14	05/27/08	05/28	GRB-105
5177-04	93		J16VC9	7.88	0.109			1		100			14	05/27/08	05/28	GRB-107
5177-05	93		Lab Control Sample	5.51	0.100			61		100				05/27/08	05/28	GRB-109
5177-06	93		Method Blank	6.31	0.100			62		100				05/27/08	05/28	GRB-110
5177-07	93		Duplicate (R805177-02)	4.71	0.110			1		100			14	05/27/08	05/28	GRB-111
inal values and limits from method				15.0	0.100			5-250		100			180			

ROCEDURES REFERENCE 900.0_ALPHABETA_GPC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
SPP-120 Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD MDA 5.75 ± 2.15
FOR 7 SAMPLES RESIDUE 18 ± 59

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1230

Test GAM Matrix LIQUID
SDG 7821
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1230

SULTS

PLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
paration batch 6148-149								
5177-01			7821-001	J16VC6	U		U	
5177-02			7821-002	J16VC7	U		U	
5177-03			7821-003	J16VC8	U		U	
5177-04			7821-004	J16VC9	U		U	
5177-05			7821-005	Lab Control Sample	ok		ok	
5177-06			7821-006	Method Blank	U		U	
5177-07			7821-007	Duplicate (R805177-02)	-	U	-	U
nal values and limits from method				RDLs (pCi/mL)	0.050		0.050	

·7 Burial Ground-Other Liquids

THOD PERFORMANCE

PLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
paration batch 6148-149			2σ prep error 7.0 % Reference Lab Notebook #6148, pg. 142													
5177-01			J16VC6	0.029	100					887			9	05/23/08	05/23	JR,02,00
5177-02			J16VC7	0.053	100					887			9	05/23/08	05/23	JR,04,00
5177-03			J16VC8	0.040	100					887			9	05/23/08	05/23	JR,05,00
5177-04			J16VC9	0.069	100					887			9	05/23/08	05/23	JR,06,00
5177-05			Lab Control Sample	0.061	100					887				05/23/08	05/23	JR,07,00
5177-06			Method Blank	0.057	100					887				05/23/08	05/23	JR,08,00
5177-07			Duplicate (R805177-02)	0.054	100					442			13	05/23/08	05/27	JR,05,00
nal values and limits from method				0.050	100					100			180			

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

AVERAGES ± 2 SD FOR 7 SAMPLES
MDA 0.052 ± 0.027
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/30/08

SDG 7821
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

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 05/30/08

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.

SDG 7821
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1230

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/30/08

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).

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7821
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1230

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/30/08

SDG 7821
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

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

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

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

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

  2. The error of ADDED.

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

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/30/08

SDG 7821
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1230

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/30/08

DUPLICATE

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

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

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

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

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

SDG 7821
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1230

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/30/08

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.

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-022	Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9F	Data Turnaround: ~~15~~ Days 7 ex		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums) K1230 (7821)		SAF No.: RC-088
Ice Chest No.: SML-531	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A 080258		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					DRUM PIN#
MO 5/21/08			RTC 5/14/08							
Sample No. / Matrix * / Sample Date / Sample Time										
J16VC6 / OTHER LIQUID / 5/14/08 / 1245					X		J16UD6			-0475
J16VC7 / OTHER LIQUID / 5/14/08 / 1320					X		J16UD7			-0567

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: B Lawrence	Received By/Stored In: RT Coffman / RT Coffman	1500 5-14-08
Relinquished By/Removed From: RT Coffman / RT Coffman	Received By/Stored In: REFER # 1A, 1060 BLDG.	1600 5/14/08
Relinquished By/Removed From: 1060/1A	Received By/Stored In: 1030 MSTankard	MAY 21 2008
Relinquished By/Removed From: 1030 MSTankard	Received By/Stored In: FedEx	MAY 21 2008
Relinquished By/Removed From: FED EX	Received By/Stored In:	05/22/08 09:30
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC 5/14

Matrix *

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-023	Page 1 of 1

Collector B. Lawrence / E. Harries	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code 9F	**Data Turnaround** ~~15~~ Days 7 RTC		
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums) K1230 (7821)		**SAF No.** RC-088
Ice Chest No. SML-531	**Field Logbook No.** EL-1395-12	**COA** RG61878500	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080258		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						DRUM PIN #
Sample No. / Matrix * / Sample Date / Sample Time											
J16VC8 / OTHER LIQUID / 5/14/08 / 1400					X					-	0239
J16VC9 / OTHER LIQUID / 5/14/08 / 1435					X					-	0238

RTC 5/14/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Blawrence BLawrence	Date/Time 1500 5-14-08	Received By/Stored In: RTCOFFMAN / RT Coffman	Date/Time 1500 5/14/08
Relinquished By/Removed From: RT COFFMAN / RT Coffman	Date/Time 1600 5/14/08	Received By/Stored In: REFER # 1A, 1060 BCDG	Date/Time 1600 5/14/08
Relinquished By/Removed From: 1060 A	Date/Time 1030 MAY 21 2008	Received By/Stored In: MSTankovich	Date/Time 1030 MAY 21 2008
Relinquished By/Removed From: 1030 MSTankovich	Date/Time MAY 21 2008	Received By/Stored In: Fed Ex	Date/Time
Relinquished By/Removed From: Fed Ex	Date/Time	Received By/Stored In:	Date/Time 05/22/08 09:30
Relinquished By/Removed From:	Date/Time	Received By/Stored In:	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC JCRD

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

JK 5/22/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 05/22/08 09:30 CoC No. RC-088-022

Container I.D. No. SML-531 Requested TAT (Days) 7 P.O. Received Yes [ ] No [X]

INSPECTION

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

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 05/22/08 Time: 10:20

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

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 113722 Calibration date 13SEP08

LIONVILLE LABORATORY INC.

RECEIVED JUN 2008

17 June 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 #	0805L177
SDG #	K1230
SAF #	RC-088
Date Received	5/22/08
# Samples	4
Matrix	SOIL
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

RECEIVED
JUN 2008

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC6	001	OI	08LE0260	05/14/08	05/27/08	06/01/08
J16VC6	001 MS	OI	08LE0260	05/14/08	05/27/08	06/01/08
J16VC6	001 MSD	OI	08LE0260	05/14/08	05/27/08	06/01/08
J16VC7	002	OI	08LE0260	05/14/08	05/27/08	06/01/08
J16VC8	003	OI	08LE0260	05/14/08	05/27/08	06/01/08
J16VC9	004	OI	08LE0260	05/14/08	05/27/08	06/01/08
LAB QC:						
SBLKVE	MB1	OI	08LE0260	N/A	05/27/08	06/01/08
SBLKVE	MB1 BS	OI	08LE0260	N/A	05/27/08	05/31/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0805L177
SDG/SAF # K1230/RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-22-2008

SEMIVOLATILE

Four (4) oil samples were collected on 05-14-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3580A (waste Dilution Protocol, 1g into 10mL DCM) on 05-27-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-31-2008 and 06-01-2008

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 samples were extracted and analyzed within required holding time.

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

3. Four (4) of forty-eight (48) surrogate recoveries were outside acceptance criteria. However J16VC9 surrogate recovery acceptance criteria were met (i.e., no more lthan one outlier per fraction {acid and base neutral} and no recoveries less than 10%). The surrogate recovery criteria were not met for sample J16VC6 MSD. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

4. Ten (10) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report has been enclosed.

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

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

k:\group\data\bna\tnuhanford\~wrl0003.tmp

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 20 pages.

LIONVILLE LABORATORY INC.

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

8. All continuing calibration standard analyzed pror to sample extracts were within acceptance criteria.

9. Internal standard area criteria were not met for sample BS. The out of criteria sample was re-analyzed with similar results and not reported. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits.

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.

Judy Stine

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/5/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0 01/5 706

Initiator: Robert Carden Batch: 0805477 Parameter: 0625H
Date: 6/3/08 Samples: M5/M50/B5 Matrix: 0,1
Client: TNU Hanford RC 088 Method: SW846/MCAWW/CLP/ Prep Batch: 0806060

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)

Several spike recoveries outside QC acceptance criteria. All surrogate recoveries within acceptance criteria (Some biased high due to matrix (oil))

2. Known or Probable Causes(s) Nitroanilines are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material. Others are biased high or just outside acceptance criteria.

3. Discussion and Proposed Action Other Description: Duplicate

__ 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] 6/3/08

✓ 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] 6/4/08 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 for diposition.

Route
__ Lab Manager: Daniels
1 Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
2 MS BNA: Carden / _____
__ Other: _____

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Semivolatiles by GC/MS, HSL List

Report Date: 06/03/08 19:55

RFW Batch Number: 0805L177 Client: TNUHANFORD RC-088 K1230 Work Order: 11343606001 Page: 1a

	Cust ID:	J16VC6	J16VC6	J16VC6	J16VC7	J16VC8	J16VC9
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	21.0	21.0	21.0	21.0	21.0	21.0
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	97 %	95 %	96 %	93 %	91 %	95 %
	2-Fluorobiphenyl	106 %	105 %	116 * %	104 %	109 %	108 %
	Terphenyl-d14	137 %	119 %	146 * %	131 %	124 %	119 %
	Phenol-d5	90 %	93 %	102 %	82 %	88 %	95 %
	2-Fluorophenol	96 %	95 %	101 %	98 %	94 %	104 %
	2,4,6-Tribromophenol	92 %	119 %	130 * %	122 %	115 %	131 * %
		fl	fl	fl	fl	fl	fl
Phenol		210000 U	88 %	95 %	210000 U	210000 U	210000 U
bis(2-Chloroethyl)ether		210000 U	77 %	80 %	210000 U	210000 U	210000 U
2-Chlorophenol		210000 U	94 %	107 %	210000 U	210000 U	210000 U
1,3-Dichlorobenzene		210000 U	94 %	110 %	210000 U	210000 U	210000 U
1,4-Dichlorobenzene		210000 U	95 %	104 %	210000 U	210000 U	210000 U
1,2-Dichlorobenzene		210000 U	100 %	112 * %	210000 U	210000 U	210000 U
2-Methylphenol		210000 U	98 %	100 %	210000 U	210000 U	210000 U
2,2'-oxybis(1-Chloropropane)		210000 U	83 %	81 %	210000 U	210000 U	210000 U
3/4 Methylphenol		210000 U	95 %	109 %	210000 U	210000 U	210000 U
N-Nitroso-di-n-propylamine		210000 U	91 %	102 %	210000 U	210000 U	210000 U
Hexachloroethane		210000 U	87 %	104 %	210000 U	210000 U	210000 U
Nitrobenzene		210000 U	85 %	91 %	210000 U	210000 U	210000 U
Isophorone		210000 U	102 %	104 %	210000 U	210000 U	210000 U
2-Nitrophenol		210000 U	131 * %	121 %	210000 U	210000 U	210000 U
2,4-Dimethylphenol		210000 U	101 %	105 %	210000 U	210000 U	210000 U
bis(2-Chloroethoxy)methane		210000 U	90 %	90 %	210000 U	210000 U	210000 U
2,4-Dichlorophenol		210000 U	106 %	116 %	210000 U	210000 U	210000 U
1,2,4-Trichlorobenzene		210000 U	97 %	108 %	210000 U	210000 U	210000 U
Naphthalene		210000 U	92 %	101 %	210000 U	210000 U	210000 U
4-Chloroaniline		210000 U	43 %	51 %	210000 U	210000 U	210000 U
Hexachlorobutadiene		210000 U	119 %	139 * %	210000 U	210000 U	210000 U
4-Chloro-3-methylphenol		210000 U	100 %	108 %	210000 U	210000 U	210000 U
2-Methylnaphthalene		210000 U	101 * %	108 * %	210000 U	210000 U	210000 U
Hexachlorocyclopentadiene		210000 U	62 %	74 %	210000 U	210000 U	210000 U
2,4,6-Trichlorophenol		210000 U	105 %	119 %	210000 U	210000 U	210000 U
2,4,5-Trichlorophenol		520000 U	109 %	117 %	520000 U	520000 U	520000 U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J16VC6		J16VC6		J16VC6		J16VC7		J16VC8		J16VC9	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	210000	U	92	%	102	%	210000	U	210000	U	210000	U
2-Nitroaniline	520000	U	91	%	95	%	520000	U	520000	U	520000	U
Dimethylphthalate	210000	U	106	%	115	%	210000	U	210000	U	210000	U
Acenaphthylene	210000	U	95	%	100	%	210000	U	210000	U	210000	U
2,6-Dinitrotoluene	210000	U	103	%	116 *	%	210000	U	210000	U	210000	U
3-Nitroaniline	520000	U	23 *	%	22 *	%	520000	U	520000	U	520000	U
Acenaphthene	210000	U	93	%	99	%	210000	U	210000	U	210000	U
2,4-Dinitrophenol	520000	U	90	%	118	%	520000	U	520000	U	520000	U
4-Nitrophenol	520000	U	137	%	144 *	%	520000	U	520000	U	520000	U
Dibenzofuran	210000	U	98	%	107	%	210000	U	210000	U	210000	U
2,4-Dinitrotoluene	210000	U	114	%	128	%	210000	U	210000	U	210000	U
Diethylphthalate	210000	U	103	%	111	%	210000	U	210000	U	210000	U
4-Chlorophenyl-phenylether	210000	U	100	%	106	%	210000	U	210000	U	210000	U
Fluorene	210000	U	94	%	106	%	210000	U	210000	U	210000	U
4-Nitroaniline	520000	U	52	%	60	%	520000	U	520000	U	520000	U
4,6-Dinitro-2-methylphenol	520000	U	106	%	123	%	520000	U	520000	U	520000	U
N-Nitrosodiphenylamine (1)	210000	U	74	%	83	%	210000	U	210000	U	210000	U
4-Bromophenyl-phenylether	210000	U	86	%	90	%	210000	U	210000	U	210000	U
Hexachlorobenzene	210000	U	100	%	110	%	210000	U	210000	U	210000	U
Pentachlorophenol	520000	U	115	%	133 *	%	520000	U	520000	U	520000	U
Phenanthrene	210000	U	90	%	102	%	24000	J	210000	U	210000	U
Anthracene	210000	U	92	%	104	%	210000	U	210000	U	210000	U
Carbazole	210000	U	88	%	91	%	210000	U	210000	U	210000	U
Di-n-butylphthalate	210000	U	90	%	101	%	210000	U	210000	U	210000	U
Fluoranthene	210000	U	97	%	101	%	210000	U	210000	U	210000	U
Pyrene	210000	U	104	%	131	%	210000	U	210000	U	210000	U
Butylbenzylphthalate	210000	U	106	%	129	%	210000	U	210000	U	210000	U
3,3'-Dichlorobenzidine	210000	U	75	%	76	%	210000	U	210000	U	210000	U
Benzo(a)anthracene	210000	U	95	%	108	%	210000	U	210000	U	210000	U
Chrysene	210000	U	96	%	113	%	210000	U	210000	U	210000	U
bis(2-Ethylhexyl)phthalate	210000	U	85	%	99	%	210000	U	210000	U	210000	U
Di-n-octyl phthalate	210000	U	72	%	80	%	210000	U	76000	J	59000	J
Benzo(b)fluoranthene	210000	U	95	%	108	%	210000	U	210000	U	210000	U
Benzo(k)fluoranthene	210000	U	96	%	96	%	210000	U	210000	U	210000	U
Benzo(a)pyrene	210000	U	100	%	109	%	210000	U	210000	U	210000	U
Indeno(1,2,3-cd)pyrene	210000	U	103	%	116	%	210000	U	210000	U	210000	U
Dibenz(a,h)anthracene	210000	U	103	%	123	%	210000	U	210000	U	210000	U
Benzo(g,h,i)perylene	210000	U	113	%	116	%	210000	U	210000	U	210000	U

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

000000009

000000010

	Cust ID:	SBLKVE		SBLKVE BS	
Sample Information	RFW#:	08LE0260-MB1		08LE0260-MB1	
	Matrix:	OIL		OIL	
	D.F.:	21.0		21.0	
	Units:	ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	97	%	94	%
	2-Fluorobiphenyl	115	%	101	%
	Terphenyl-d14	136	%	95	%
	Phenol-d5	97	%	95	%
	2-Fluorophenol	100	%	99	%
	2,4,6-Tribromophenol	116	%	109	%
Phenol		210000	U	87	%
bis(2-Chloroethyl)ether		210000	U	71	%
2-Chlorophenol		210000	U	92	%
1,3-Dichlorobenzene		210000	U	92	%
1,4-Dichlorobenzene		210000	U	92	%
1,2-Dichlorobenzene		210000	U	96	%
2-Methylphenol		210000	U	96	%
2,2'-oxybis(1-Chloropropane)		210000	U	81	%
3/4 Methylphenol		210000	U	94	%
N-Nitroso-di-n-propylamine		210000	U	93	%
Hexachloroethane		210000	U	88	%
Nitrobenzene		210000	U	82	%
Isophorone		210000	U	94	%
2-Nitrophenol		210000	U	110	%
2,4-Dimethylphenol		210000	U	95	%
bis(2-Chloroethoxy)methane		210000	U	87	%
2,4-Dichlorophenol		210000	U	103	%
1,2,4-Trichlorobenzene		210000	U	93	%
Naphthalene		210000	U	86	%
4-Chloroaniline		210000	U	44	%
Hexachlorobutadiene		210000	U	112	%
4-Chloro-3-methylphenol		210000	U	101	%
2-Methylnaphthalene		210000	U	98	%
Hexachlorocyclopentadiene		210000	U	98	%
2,4,6-Trichlorophenol		210000	U	100	%
2,4,5-Trichlorophenol		520000	U	100	%

*= Outside of EPA CLP QC limits.

Cust ID: SBLKVE SBLKVE BS

RFW#: 08LE0260-MB1 08LE0260-MB1

2-Chloronaphthalene	210000	U	89		%
2-Nitroaniline	520000	U	76		%
Dimethylphthalate	210000	U	93		%
Acenaphthylene	210000	U	92		%
2,6-Dinitrotoluene	210000	U	96		%
3-Nitroaniline	520000	U	4	*	%
Acenaphthene	210000	U	87		%
2,4-Dinitrophenol	520000	U	122	*	%
4-Nitrophenol	520000	U	110		%
Dibenzofuran	210000	U	98		%
2,4-Dinitrotoluene	210000	U	103		%
Diethylphthalate	210000	U	93		%
4-Chlorophenyl-phenylether	210000	U	94		%
Fluorene	210000	U	95		%
4-Nitroaniline	520000	U	41	*	%
4,6-Dinitro-2-methylphenol	520000	U	113		%
N-Nitrosodiphenylamine (1)	210000	U	59		%
4-Bromophenyl-phenylether	210000	U	79		%
Hexachlorobenzene	210000	U	98		%
Pentachlorophenol	520000	U	127		%
Phenanthrene	210000	U	92		%
Anthracene	210000	U	96		%
Carbazole	210000	U	50	*	%
Di-n-butylphthalate	210000	U	89		%
Fluoranthene	210000	U	107		%
Pyrene	210000	U	87		%
Butylbenzylphthalate	210000	U	85		%
3,3'-Dichlorobenzidine	210000	U	27		%
Benzo(a)anthracene	210000	U	93		%
Chrysene	210000	U	94		%
bis(2-Ethylhexyl)phthalate	210000	U	82		%
Di-n-octyl phthalate	210000	U	77		%
Benzo(b)fluoranthene	210000	U	86		%
Benzo(k)fluoranthene	210000	U	87		%
Benzo(a)pyrene	210000	U	92		%
Indeno(1,2,3-cd)pyrene	210000	U	81		%
Dibenz(a,h)anthracene	210000	U	84		%
Benzo(g,h,i)perylene	210000	U	81		%

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16VC6

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

Client: TNUHANFORD RC-088 K1230

Matrix: (soil/water) OIL

Lab Sample ID: 0805L177-001

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N053112

Level: (low/med) LOW

Date Received: 05/22/08

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

Date Extracted: 05/27/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/01/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

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	28.901	1000000	J
2.	UNKNOWN	30.383	8000000	J
3.	UNKNOWN	30.862	1000000	J
4.	UNKNOWN	31.019	5000000	J
5.	UNKNOWN	31.795	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16VC7

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

Client: TNUHANFORD RC-088 K1230

Matrix: (soil/water) OIL

Lab Sample ID: 0805L177-002

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N053113

Level: (low/med) LOW

Date Received: 05/22/08

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

Date Extracted: 05/27/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/01/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

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	33.350	1000000	J
2.	UNKNOWN	34.187	1000000	J
3.	UNKNOWN	35.730	2000000	J
4.	UNKNOWN	36.436	2000000	J
5.	UNKNOWN	38.188	4000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16VC8

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

Client: TNUHANFORD RC-088 K1230

Matrix: (soil/water) OIL

Lab Sample ID: 0805L177-003

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N053114

Level: (low/med) LOW

Date Received: 05/22/08

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

Date Extracted: 05/27/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/01/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

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	31.161	1000000	J
2.	UNKNOWN	31.257	3000000	J
3.	UNKNOWN	34.779	2000000	J
4.	UNKNOWN	35.703	3000000	J
5.	UNKNOWN	38.135	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16VC9

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

Client: TNUHANFORD RC-088 K1230

Matrix: (soil/water) OIL

Lab Sample ID: 0805L177-004

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N053115

Level: (low/med) LOW

Date Received: 05/22/08

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

Date Extracted: 05/27/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/01/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

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	30.341	5000000	J
2.	UNKNOWN	30.794	2000000	J
3.	UNKNOWN	30.942	1000000	J
4.	UNKNOWN	31.736	2000000	J
5.	UNKNOWN	38.160	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKVE

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

Client: TNUHANFORD RC-088 K1230

Matrix: (soil/water) OIL

Lab Sample ID: 08LE0260-MB1

Sample wt/vol: 1.00 (g/mL) G

Lab File ID: N053106

Level: (low/med) LOW

Date Received: 05/27/08

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

Date Extracted: 05/27/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 06/01/08

Injection Volume: 2.0(uL)

Dilution Factor: 21.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.465	100000	J
2.	UNKNOWN	3.499	200000	J
3.	UNKNOWN	36.251	70000	J
4.	UNKNOWN	38.247	70000	J
5.	UNKNOWN	42.153	70000	J

ville Laboratory Use Only

18051177

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000017

t: TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7DAY

65-08 5-22-08

Rec'd 5-22-08 Date Due ~~5-29-08~~

Refrigerator #			A														
#/Type Container	Liquid		B														
	Solid																
Volume			250														
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN	Asbestos					

IX Si oil edment olid ludge Vater Oil Ar lrum olids lrum iquids P/TCLP eachate /ipe Other ash	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
									0625H	0PCB				Met①		IIGN			
	001	J16VC6			Oil	5-14-08	1245		X	X				X		X			
	002	J16VC7				5-14-08	1320		X	X				X		X			
	003	J16VC8				5-14-08	1410		X	X				X		X			
	004	J16VC9				5-14-08	1435		X	X				X		X			

ial Instructions: Run matrix QC

Met①: HSL+Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5/22/08	0945

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-088-022	Page 1 of 1
ector . Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9F Data Turnaround ~~15~~ Days 7 BTC
ect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No. AFS-06-004	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment Fed Ex	
ned To BERLINE SERVICES / LIONVILLE	Offsite Property No. A 080284	Bill of Lading/Air Bill No. See OSPL	

SSIBLE SAMPLE HAZARDS/REMARKS

ential Radioactive contamination, potential beryllium tamination

ecial Handling and/or Storage

ne

Preservation			Cool 4C	Cool 4C	None	None	None				
Type of Container			aG	aG	P	P	P				
No. of Container(s)			1	0	0	0	1				
Volume			250mL	125mL	125mL	60mL	500mL				
SAMPLE ANALYSIS			Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				DRUM PIN#
Sample No.	Matrix *	Sample Date	Sample Time								
VC6	OTHER LIQUID	5/14/08	1245	X	X	X	X		J16UD6		-0475
VC7	OTHER LIQUID	5/14/08	1320	X	X	X	X		J16UD7		-0567

RTC 5/14/08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Blawrence	5-14-08 1500	RTCoffman/RTCoffman	5/14/08 1500
RTCoffman/RTCoffman	5/14/08 1600	Reefer #1A, 1060 Bldg	5/14/08 1600
60/1A 0830	MAY 21 2008	0830 MSTankouch	MAY 21 2008
0830 MStankouch	MAY 21 2008	Fed Ex	
Fed Ex	5-22-08 0945	Victor Hernandez	5-22-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC JRA

Matrix *

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

BORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-023	Page 1 of 1
lector . Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9F Data Turnaround ~~15~~ Days 7 BC
lect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No. AFS-06-004	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment Fed Ex	
nped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080284	Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

tential Radioactive contamination, potential beryllium ntamination

ecial Handling and/or Storage

ne

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					

RC 5/14/08

Sample No.	Matrix *	Sample Date	Sample Time									DRUM PINH
VC8	OTHER LIQUID	5/14/08	1410	X	X	X	X			5160D8	-	0239
VC9	OTHER LIQUID	5/14/08	1435	X	X	X	X			5160D9	-	0238

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	1500 5-14-08	R Coffman / RT Coffman	1500 5/14/08
J Coffman / RT Coffman	1600 5/14/08	Refer #1A, 1060 BLDG.	1600 5/14/08
60/1A	0830 MAY 21 2008	MS Ankouch	0830 MAY 21 2008
MS Ankouch	0830 MAY 21 2008	Fed Ex	
Fed Ex	5-22-08 0945		5-22-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RC JKD

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

CH-EE-011

0000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 5/22/08

LvLI Batch #: 08052177

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7900 1913 4213
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 2.5	°C	Cooler # AFS-06-004
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☑ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-088 K1230

RECEIVED JUN 2008

DATE RECEIVED: 05/22/08 LVL LOT # :0805L179

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC6	001	OI	08LE0259	05/14/08	05/27/08	05/29/08
J16VC6	001 MS	OI	08LE0259	05/14/08	05/27/08	05/29/08
J16VC6	001 MSD	OI	08LE0259	05/14/08	05/27/08	05/29/08
J16VC7	002	OI	08LE0259	05/14/08	05/27/08	05/29/08
J16VC8	003	OI	08LE0259	05/14/08	05/27/08	05/29/08
J16VC9	004	OI	08LE0259	05/14/08	05/27/08	05/29/08
LAB QC:						
PBLKQS	MB1	S	08LE0259	N/A	05/27/08	05/28/08
PBLKQS	MB1 BS	S	08LE0259	N/A	05/27/08	05/28/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0805L177
SDG/SAF # K1230 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-22-2008

PCB

Four (4) oil samples were collected on 05-14-2008.

The samples and their associated QC samples were extracted on 05-27-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 05-28,29-2008. The extraction procedure was based on method 3580A (waste dilution – 1g into 10 mLs Hexane and the extracts were analyzed based on method 8082.

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

1. Samples were extracted and analyzed within required holding time

2. The samples and their associated QC samples received Silica Gel, Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3630C, 3660A and 3665A respectively.

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

4. All surrogate recoveries were within acceptance criteria.

5. All blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

3. Due to high concentrations of target analytes samples; J16VC8, J16VC9 required a 5-fold dilution.

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

f:\group\data\pest\tnu\0805-177ko2.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 17 pages.

LIONVILLE LABORATORY INC.

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

9. The results for oil 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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/5/08
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: 05/30/08 13:05

RFW Batch Number: **0805L177** Client: **TNU-HANFORD RC-088** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J16VC6	J16VC6	J16VC6	J16VC7	J16VC8	J16VC9
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	1.00	1.00	1.00	1.00	5.00	5.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		95 %	101 %	103 %	98 %	88 %	115 %
Decachlorobiphenyl		58 %	60 %	64 %	68 %	87 %	115 %
Aroclor-1016		400 U	82 %	74 %	400 U	2000 U	2000 U
Aroclor-1221		400 U	400 U	400 U	400 U	2000 U	21000
Aroclor-1232		400 U	400 U	400 U	400 U	2000 U	2000 U
Aroclor-1242		400 U	400 U	400 U	400 U	2000 U	2000 U
Aroclor-1248		380 J	NR	NR	400 U	13000	13000
Aroclor-1254		280 J	NR	NR	400 U	2000 U	2000 U
Aroclor-1260		400 U	61 %	58 %	400 U	2000 U	2000 U

	Cust ID:	PBLKQS	PBLKQS BS
Sample Information	RFW#:	08LE0259-MB1	08LE0259-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		124 %	116 %
Decachlorobiphenyl		106 %	105 %
Aroclor-1016		400 U	92 %
Aroclor-1221		400 U	400 U
Aroclor-1232		400 U	400 U
Aroclor-1242		400 U	400 U
Aroclor-1248		400 U	400 U
Aroclor-1254		400 U	400 U
Aroclor-1260		400 U	97 %

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 05/27/08 Extraction Batch No: 08LE0259 Analyst: MF Method: **** WD 3580

Test: OPCB Cleanup Date: 05/27/08 Analyst: MF Client: TNU-HANFORD RC-088

LIMS Report Date: 05/28/08 Solvent: HEXANE Adsorbent: H2SO4 / silica

000000006

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
0805L153-	TNU-HANFORD RC-088										
001	J16M74		1.0	1.0		10		1.0	N		10000
001 -S	J16M74		1.0	1.0	1.0	10		1.0	N		10000
001 -T	J16M74		1.0	1.0	1.0	10		1.0	N		10000
003	J16VC4		1.0	1.0		10		1.0	N		10000
004	J16VC5		1.0	1.0		10		1.0	N		10000
0805L177-	TNU-HANFORD RC-088										
001	J16VC6		1.0	1.0		10		1.0	N		10000
001 -S	J16VC6		1.0	1.0	1.0	10		1.0	N		10000
001 -T	J16VC6		1.0	1.0	1.0	10		1.0	N		10000
002	J16VC7		1.0	1.0		10		1.0	N		10000
003	J16VC8		1.0	1.0		10		1.0	N		10000
004	J16VC9		1.0	1.0		10		1.0	N		10000
0805L181-	TNU-HANFORD RC-012										
001	J16VK7		1.0	1.0		10		1.0	N		10000
001 -S	J16VK7		1.0	1.0	1.0	10		1.0	N		10000
001 -T	J16VK7		1.0	1.0	1.0	10		1.0	N		10000
08LE0259-MB1	PBLKQS		1.0	1.0		10		1.0	N	100.00	10000
08LE0259-MB1 -S	PBLKQS		1.0	1.0	1.0	10		1.0	N	100.00	10000

Comments:
Surrogate: 250 UL OLM PSURR 89916406
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	5/28/08 1310	SZ	5/28/08 13:15	GC

ville Laboratory Use Only

08051177

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000007

: TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7Day

605-08 5-22-08

Rec'd 5-22-08 Date Due ~~5-29-08~~

Refrigerator #		A												
#/Type Container	Liquid / Solid	3												
Volume		250												
Preservatives														
ANALYSES REQUESTED		ORGANIC						INORG						
		VOA	BNA	Pest/PCB	Herb			Metal	CN					
Lionville Laboratory Use Only			0625H	OPCB				MetH		IIGN				

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected											
001	J16VC6			OIL	5-14-08	1245		X	X				X		X		
002	J16VC7				5-14-08	1320		X	X				X		X		
003	J16VC8				5-14-08	1410		X	X				X		X		
004	J16VC9				5-14-08	1435		X	X				X		X		

IX
S:
oil
edment
olid
ludge
/ater
il
r
rum
olids
rum
quids
P/TCLP
eachate
ipe
ther
sh

ial Instructions: Run matrix QC

Met ① = HSL + Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5/22/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE MASTER	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-022 | Page 1 of 1

lector . Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
ject Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-06-004	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
nned To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A 080284		Bill of Lading/Air Bill No. See OSPL

Price Code 9F

Data Turnaround ~~15~~ Days 7 RTC

OSSIBLE SAMPLE HAZARDS/REMARKS

tential Radioactive contamination, potential beryllium ntamination

ecial Handling and/or Storage

ne

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	sG	sG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						

Sample No.	Matrix *	Sample Date	Sample Time										Drum PIN #
VC6	OTHER LIQUID	5/14/08	1245	X	X	X	X			J16VD6			-0475
VC7	OTHER LIQUID	5/14/08	1320	X	X	X	X			J16VD7			-0567

RTC 5/14/08

CHAIN OF POSSESSION	Sign/Print Names	
quished By/Removed From Blawrence 5-14-08	Date/Time 1500	Received By/Stored In RTCoffman/RTCoffman 5/14/08	Date/Time 1500
quished By/Removed From RT Coffman/RT Coffman 5/14/08	Date/Time 1600	Received By/Stored In Reefer #1A, 060 Bldg 5/14/08	Date/Time 1600
quished By/Removed From 60/1A 0830 MAY 21 2008	Date/Time	Received By/Stored In MSTankouch MAY 21 2008	Date/Time 0830
quished By/Removed From MStankouch MAY 21 2008	Date/Time 0830	Received By/Stored In Fed Ex	Date/Time
quished By/Removed From Fed Ex 5-22-08	Date/Time 0945	Received By/Stored In Victor Hernandez 5-22-08	Date/Time 0945
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC JRA

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

BORATORY SECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-023 | Page 1 of 1

llector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9F	Data Turnaround ~~15~~ Days 1 RC		
ɔject Designation 518-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-06-004	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080284		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					DRUM PIN #
3VC8	OTHER LIQUID	5/14/08	1410	X	X	X	X			5160D8		-0239	
3VC9	OTHER LIQUID	5/14/08	1435	X	X	X	X			5160D9		-0238	

RC 5/14/08

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	1500 5-14-08	R Coffman / RT Coffman	1500 5/14/08
T Coffman / RT Coffman	1600 5/14/08	Refer #1A, 1060 BLDG.	1600 5/14/08
60/IM	0830 MAY 21 2008	MSTankovich	0830 MAY 21 2008
MSTankovich	0830 MAY 21 2008	Fed Ex	
Fed Ex	5-22-08 0945		5-22-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) (Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium); ICP Metals - 6010A (Add-on) (Arsenic, Beryllium, Lead, Selenium, Thallium, Tin); Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RC JKD

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

:H-EE-011

600000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-088

Date: 5/22/08

LvLI Batch #: 0805L177

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7900 1913 4213
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 2.5	°C	Cooler # AFS-06-004
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☑ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC6						
SILVER, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
ALUMINUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
CALCIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
MERCURY, TOTAL	001	OI	08C0092	05/14/08	05/29/08	05/30/08
MERCURY, TOTAL	001 REP	OI	08C0092	05/14/08	05/29/08	05/30/08
MERCURY, TOTAL	001 MS	OI	08C0092	05/14/08	05/29/08	05/30/08
POTASSIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
SODIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	001	OI	08L0216	05/14/08	05/30/08	06/03/08
J16VC7						
SILVER, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
SILVER, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
SILVER, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
ALUMINUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
ALUMINUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
CALCIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
CALCIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
CALCIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
MERCURY, TOTAL	002	OI	08C0092	05/14/08	05/29/08	05/30/08
POTASSIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
POTASSIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
POTASSIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
SODIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
SODIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	002	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	002 REP	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	002 MS	OI	08L0216	05/14/08	05/30/08	06/03/08
J16VC8						
SILVER, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
ALUMINUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
MERCURY, TOTAL	003	OI	08C0092	05/14/08	05/29/08	05/30/08
POTASSIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
SODIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	003	OI	08L0216	05/14/08	05/30/08	06/03/08
J16VC9						
SILVER, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
ALUMINUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
ARSENIC, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
BARIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
BERYLLIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
CALCIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
CADMIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
COBALT, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
CHROMIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
COPPER, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
IRON, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
MERCURY, TOTAL	004	OI	08C0092	05/14/08	05/29/08	05/30/08
POTASSIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
MAGNESIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
MANGANESE, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
NICKEL, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
LEAD, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
ANTIMONY, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
SELENIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
TIN, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
THALLIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
VANADIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
ZINC, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08
ZIRCONIUM, TOTAL	004	OI	08L0216	05/14/08	05/30/08	06/03/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
SILVER, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
ALUMINUM LABORTORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
ALUMINUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
ARSENIC LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
ARSENIC, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
BARIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
BARIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
BERYLLIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
CALCIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
CALCIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
CADMIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
CADMIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
COBALT LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
COBALT, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
CHROMIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
CHROMIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
COPPER LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
COPPER, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
IRON LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
IRON, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
MERCURY LABORATORY	LC1 BS	S	08C0092	N/A	05/29/08	05/30/08
MERCURY, TOTAL	MB1	S	08C0092	N/A	05/29/08	05/30/08
POTASSIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1230

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
MAGNESIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
MANGANESE LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
MANGANESE, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
SODIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
SODIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
NICKEL LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
NICKEL, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
LEAD LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
LEAD, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
ANTIMONY LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
ANTIMONY, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
SELENIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
SELENIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
TIN LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
TIN, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
THALLIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
THALLIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
VANADIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
VANADIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08
ZINC LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/03/08
ZINC, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/03/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0216	N/A	05/30/08	06/01/08
ZIRCONIUM, TOTAL	MB1	S	08L0216	N/A	05/30/08	06/01/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0805L177
SDG/SAF#: K1230/RC-088

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-08

METALS CASE NARRATIVE

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

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

1. This narrative covers the analyses of 4 oil samples.

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

   All samples for Aluminum, Calcium, Copper, Iron, and Magnesium were rerun and reported on a different instrument due to sample matrix.

   All samples were reported with a 5-fold dilution for Mercury due to sample matrix.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Sodium and Potassium in file TA0601A and Sodium, Potassium, and Zinc in file TA0603A. All samples were rerun for Sodium, Zinc, and Potassium along with Aluminum, Calcium, Copper, Iron, and Magnesium in file PS0603A.

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ) with the exception of Zinc in file TA0603A. All samples were rerun for Zinc in file PS0603A.

6. The preparation/method blank 08L0216 for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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 27 pages.

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.

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

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

9. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. The duplicate analysis for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

11. 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.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/5/08
Date

alm/m05-177

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

ot#: 08051177

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	✓6010B		200.7				99
ntimony	✓6010B	7041 [5]	200.7	204.2			99
rsenic	✓6010B	7060A [5]	200.7	206.2	3113B		99
arium	✓6010B		200.7				99
eryllium	✓6010B		200.7				99
ismuth	6010B [1]		200.7 [1]			1620	99
oron	6010B		200.7				99
admium	✓6010B	7131A [5]	200.7	213.2			99
alcium	✓6010B		200.7				99
hromium	✓6010B	7191 [5]	200.7	218.2			SS17
obalt	✓6010B		200.7				99
opper	✓6010B	7211 [5]	200.7	220.2			99
ron	✓6010B		200.7				99
ead	✓6010B	7421 [5]	200.7	239.2	3113B		99
ithium	6010B	7430 [4]	200.7			1620	99
agnesium	✓6010B		200.7				99
anganese	✓6010B		200.7				99
ercury	7470A [3]	✓7471A [3]	245.1 [2]	245.5 [2]			99
olybdenum	6010B		200.7				99
ickel	✓6010B		200.7				99
otassium	✓6010B	7610 [4]	200.7	258.1 [4]			99
are Earths	6010B [1]		200.7 [1]			1620	99
elenium	✓6010B	7740 [5]	200.7	270.2	3113B		99
ilicon	6010B [1]		200.7			1620	99
ilica	6010B		200.7			1620	99
ilver	✓6010B	7761 [5]	200.7	272.2			99
odium	✓6010B	7770 [4]	200.7	273.1 [4]			99
trontium	6010B		200.7				99
hallium	✓6010B	7841 [5]	200.7	279.2	200.9		99
in	✓6010B		200.7				99
itanium	6010B		200.7				99
ranium	6010B [1]		200.7 [1]			1620	99
anadium	✓6010B		200.7				99
inc	✓6010B		200.7				99
irconium	✓6010B [1]		200.7 [1]			1620	99

Other:_____ Method:_____

L-WI-033/M-03/01
000000009

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.

B = Indicates that the parameter was between the Instrument Detection Limit (IDL) and the Contract Required Detection Limit (CRDL)

Q QUALIFIERS

E = The reported value is estimated because of the presence of interference.

M = Duplicate injection precision not met.

N = Spiked sample recovery not within control limits.

S = The reported value was determined by the Method of Standard Additions (MSA).

W = Post Digestion spike for Furnace AA analysis is out of control limits (85 -115 %), while sample absorbance is less than 50% of spike absorbance.

* = Duplicate analysis not within control limits.

+ = Correlation coefficient for the MSA is less than 0.995.

ABBREVIATIONS

PB = Method or Preparation Blank.
S = Matrix Spike.
T = Matrix Spike Duplicate.
R or D = Sample Replicate

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.

RFW 21-21L-033/O-01/97

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16VC6	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Aluminum, Total	3.5	u	MG/KG	3.5	1.0
		Arsenic, Total	0.44	u	MG/KG	0.44	1.0
		Barium, Total	0.74		MG/KG	0.09	1.0
		Beryllium, Total	0.04	u	MG/KG	0.04	1.0
		Calcium, Total	10.1		MG/KG	3.5	1.0
		Cadmium, Total	0.04	u	MG/KG	0.04	1.0
		Cobalt, Total	0.17	u	MG/KG	0.17	1.0
		Chromium, Total	0.17	u	MG/KG	0.17	1.0
		Copper, Total	0.38		MG/KG	0.20	1.0
		Iron, Total	14.1		MG/KG	3.9	1.0
		Mercury, Total	0.05	u	MG/KG	0.05	5.0
		Potassium, Total	76.8		MG/KG	42.9	1.0
		Magnesium, Total	3.2	u	MG/KG	3.2	1.0
		Manganese, Total	0.20		MG/KG	0.03	1.0
		Sodium, Total	32.9		MG/KG	1.7	1.0
		Nickel, Total	0.22		MG/KG	0.17	1.0
		Lead, Total	0.26	u	MG/KG	0.26	1.0
		Antimony, Total	0.26	u	MG/KG	0.26	1.0
		Selenium, Total	0.52	u	MG/KG	0.52	1.0
		Tin, Total	0.95		MG/KG	0.52	1.0
		Thallium, Total	0.52	u	MG/KG	0.52	1.0
		Vanadium, Total	0.12	u	MG/KG	0.12	1.0
		Zinc, Total	0.70		MG/KG	0.52	1.0
		Zirconium, Total	4.4	u	MG/KG	4.4	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16VC7	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	3.1 u	MG/KG	3.1	1.0
		Arsenic, Total	0.39 u	MG/KG	0.39	1.0
		Barium, Total	491	MG/KG	0.08	1.0
		Beryllium, Total	0.04 u	MG/KG	0.04	1.0
		Calcium, Total	11.5	MG/KG	3.1	1.0
		Cadmium, Total	0.14	MG/KG	0.04	1.0
		Cobalt, Total	0.16 u	MG/KG	0.16	1.0
		Chromium, Total	0.20	MG/KG	0.16	1.0
		Copper, Total	4.5	MG/KG	0.18	1.0
		Iron, Total	20.8	MG/KG	3.5	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	60.4	MG/KG	38.5	1.0
		Magnesium, Total	2.9 u	MG/KG	2.9	1.0
		Manganese, Total	0.15	MG/KG	0.03	1.0
		Sodium, Total	28.6	MG/KG	1.6	1.0
		Nickel, Total	0.35	MG/KG	0.16	1.0
		Lead, Total	1.1	MG/KG	0.23	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.78	MG/KG	0.47	1.0
		Tin, Total	1.2	MG/KG	0.47	1.0
		Thallium, Total	0.47 u	MG/KG	0.47	1.0
		Vanadium, Total	0.11 u	MG/KG	0.11	1.0
		Zinc, Total	9.4	MG/KG	0.47	1.0
		Zirconium, Total	3.9 u	MG/KG	3.9	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16VC8	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	6.4	MG/KG	3.5	1.0
		Arsenic, Total	0.44 u	MG/KG	0.44	1.0
		Barium, Total	38.5	MG/KG	0.09	1.0
		Beryllium, Total	0.04 u	MG/KG	0.04	1.0
		Calcium, Total	16.2	MG/KG	3.5	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	0.49	MG/KG	0.17	1.0
		Chromium, Total	1.7	MG/KG	0.17	1.0
		Copper, Total	12.6	MG/KG	0.20	1.0
		Iron, Total	4100	MG/KG	3.9	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	66.8	MG/KG	42.9	1.0
		Magnesium, Total	5.5	MG/KG	3.2	1.0
		Manganese, Total	16.6	MG/KG	0.03	1.0
		Sodium, Total	45.2	MG/KG	1.7	1.0
		Nickel, Total	0.65	MG/KG	0.17	1.0
		Lead, Total	0.78	MG/KG	0.26	1.0
		Antimony, Total	0.26 u	MG/KG	0.26	1.0
		Selenium, Total	0.52 u	MG/KG	0.52	1.0
		Tin, Total	1.2	MG/KG	0.52	1.0
		Thallium, Total	0.52 u	MG/KG	0.52	1.0
		Vanadium, Total	0.12 u	MG/KG	0.12	1.0
		Zinc, Total	7.4	MG/KG	0.52	1.0
		Zirconium, Total	4.4 u	MG/KG	4.4	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16VC9	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	4.6	MG/KG	3.4	1.0
		Arsenic, Total	0.42 u	MG/KG	0.42	1.0
		Barium, Total	13.8	MG/KG	0.08	1.0
		Beryllium, Total	0.04 u	MG/KG	0.04	1.0
		Calcium, Total	16.7	MG/KG	3.4	1.0
		Cadmium, Total	0.07	MG/KG	0.04	1.0
		Cobalt, Total	0.17 u	MG/KG	0.17	1.0
		Chromium, Total	0.20	MG/KG	0.17	1.0
		Copper, Total	13.7	MG/KG	0.19	1.0
		Iron, Total	54.7	MG/KG	3.8	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	44.7	MG/KG	41.4	1.0
		Magnesium, Total	3.1 u	MG/KG	3.1	1.0
		Manganese, Total	0.29	MG/KG	0.03	1.0
		Sodium, Total	28.8	MG/KG	1.7	1.0
		Nickel, Total	0.17 u	MG/KG	0.17	1.0
		Lead, Total	94.2	MG/KG	0.25	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.50 u	MG/KG	0.50	1.0
		Tin, Total	1.4	MG/KG	0.50	1.0
		Thallium, Total	0.50 u	MG/KG	0.50	1.0
		Vanadium, Total	0.12 u	MG/KG	0.12	1.0
		Zinc, Total	2.5	MG/KG	0.50	1.0
		Zirconium, Total	4.2 u	MG/KG	4.2	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0216-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
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	6.5	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	0.24	MG/KG	0.23	1.0
		Iron, Total	6.0	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	3.7 u	MG/KG	3.7	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Sodium, Total	25.9	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
		Tin, Total	1.1	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.61	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0092-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230

LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16VC6	Mercury, Total	1.7	0.05u	1.7	101.9	5.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J16VC7	Silver, Total	3.3	0.08u	3.8	86.8	1.0
		Aluminum, Total	137	3.1 u	152	90.1	1.0
		Arsenic, Total	132	0.39u	152	87.2	1.0
		Barium, Total	647	491	152	102.6	1.0
		Beryllium, Total	3.4	0.04u	3.8	89.5	1.0
		Calcium, Total	1680	11.5	1900	87.8	1.0
		Cadmium, Total	3.6	0.14	3.8	91.1	1.0
		Cobalt, Total	34.7	0.16u	37.9	91.6	1.0
		Chromium, Total	14.3	0.20	15.2	92.8	1.0
		Copper, Total	21.3	4.5	18.9	88.9	1.0
		Iron, Total	85.2	20.8	75.8	85.0	1.0
		Potassium, Total	1650	60.4	1900	84.0	1.0
		Magnesium, Total	1630	2.9 u	1900	85.8	1.0
		Manganese, Total	36.4	0.15	37.9	95.6	1.0
		Sodium, Total	1740	28.6	1900	90.6	1.0
		Nickel, Total	34.6	0.35	37.9	90.4	1.0
		Lead, Total	35.4	1.1	37.9	90.5	1.0
		Antimony, Total	34.2	0.23u	37.9	90.2	1.0
		Selenium, Total	114	0.78	152	74.8	1.0
		Tin, Total	71.2	1.2	75.8	92.3	1.0
		Thallium, Total	136	0.47u	152	89.4	1.0
		Vanadium, Total	35.5	0.11u	37.9	93.7	1.0
		Zinc, Total	40.6	9.4	37.9	82.3	1.0
		Zirconium, Total	354	3.9 u	379	93.5	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16VC6	Mercury, Total	0.05u	0.05u	NC	5.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J16VC7	Silver, Total	0.08u	0.08u	NC	1.0
		Aluminum, Total	3.1 u	3.7	NC	1.0
		Arsenic, Total	0.39u	0.41u	NC	1.0
		Barium, Total	491	499	1.6	1.0
		Beryllium, Total	0.04u	0.04u	NC	1.0
		Calcium, Total	11.5	17.4	40.8	1.0
		Cadmium, Total	0.14	0.15	5.1	1.0
		Cobalt, Total	0.16u	0.17u	NC	1.0
		Chromium, Total	0.20	0.19	4.4	1.0
		Copper, Total	4.5	4.6	2.2	1.0
		Iron, Total	20.8	18.2	13.3	1.0
		Potassium, Total	60.4	47.5	23.9	1.0
		Magnesium, Total	2.9 u	4.4	NC	1.0
		Manganese, Total	0.15	0.17	11.0	1.0
		Sodium, Total	28.6	54.4	62.2	1.0
		Nickel, Total	0.35	0.17u	NC	1.0
		Lead, Total	1.1	1.1	0.00	1.0
		Antimony, Total	0.23u	0.25u	NC	1.0
		Selenium, Total	0.78	0.50u	NC	1.0
		Tin, Total	1.2	1.5	22.2	1.0
		Thallium, Total	0.47u	0.50u	NC	1.0
		Vanadium, Total	0.11u	0.12u	NC	1.0
		Zinc, Total	9.4	9.4	0.00	1.0
		Zirconium, Total	3.9 u	4.1 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/05/08

CLIENT: TNUHANFORD RC-088 K1230 LVL LOT #: 0805L177

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0216-LC1	Silver, LCS	48.4	50.0	MG/KG	96.8
		Aluminum, LCS	447	500	MG/KG	89.3
		Arsenic, LCS	898	1000	MG/KG	89.8
		Barium, LCS	481	500	MG/KG	96.1
		Beryllium, LCS	23.7	25.0	MG/KG	94.8
		Calcium, LCS	2180	2500	MG/KG	87.3
		Cadmium, LCS	23.2	25.0	MG/KG	92.8
		Cobalt, LCS	236	250	MG/KG	94.5
		Chromium, LCS	48.1	50.0	MG/KG	96.2
		Copper, LCS	112	125	MG/KG	89.4
		Iron, LCS	452	500	MG/KG	90.3
		Potassium, LCS	2220	2500	MG/KG	88.8
		Magnesium, LCS	2150	2500	MG/KG	85.9
		Manganese, LCS	73.0	75.0	MG/KG	97.3
		Sodium, LCS	2290	2500	MG/KG	91.4
		Nickel, LCS	191	200	MG/KG	95.3
		Lead, LCS	234	250	MG/KG	93.5
		Antimony, LCS	278	300	MG/KG	92.7
		Selenium, LCS	862	1000	MG/KG	86.2
		Tin, LCS	484	500	MG/KG	96.7
		Thallium, LCS	926	1000	MG/KG	92.6
		Vanadium, LCS	240	250	MG/KG	95.9
		Zinc, LCS	84.6	100	MG/KG	84.6
		Zirconium, LCS	481	500	MG/KG	96.2
LCS1	08C0092-LC1	Mercury, LCS	4.8	4.7	MG/KG	101.1

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0216
Date/Time Initiated: 5/30/08 1345
Date/Time Completed: 5/30/08 1915
Analyst(s): MW
Matrix: Soil Water Other: soils/solids/oils
Instr. Type: AA ICP
Parameters: Lee Packlog

Digested / Undigested (circle one)
Balance #: 620
Balance Cal Verif: (Y) NA
Hot Plate Temp: 90°

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

BJC/TNU

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08052307-001		1.10gm	100ml	<2	TO	N/A	cloudy amber liquid	N/A	FAB
001R		1.11gm							
001S	1.0ml	1.14gm							
002		1.10gm							
003		1.20gm							
08052177-001 002		1.28gm					amber oil		
(A) 001R 002R		1.21gm							
001S 002S	1.0ml	(A) 1.32gm							
002 001		1.15gm							
003		1.15gm							
004		1.19gm							
08052180-001		1.07gm				sticky	black goo (like crude)		
001R		1.04gm							
001S	1.0ml	1.08gm							
08052185-001		1.23gm				coarse	brown soil	rocks	
001R		1.21gm							
001S	1.0ml *	1.23gm							
002		1.25gm							
08L0216-MB1		1.0gm					bouncing chips	N/A	
LC1	1.0ml *(A)	1.0gm							

MW 5/30/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL 605039
H_2O_2 E44A06
1:1 HNO_3 9789-079-07
1:1 HCL

File ID#: IC021601, IC021603, IC021603 updated
LIMS Transfer: (Y) N
Data Review By/Date: RMP, 06/01/08

(A) and 0.5ml 6072-076-05 (Zr)
* and 0.5ml 6072-076-06 (Bi)
0.5ml 6072-076-07 (P-)
0.5ml 6072-078-01 (U-)

(*) samples numbered backwards MW 5/30/07

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TEB
Date 5/29/08
Start Time/Temp: 1430 | 93°
End Time/Temp: 1500 | 97°

Instrument ID Hg3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0092
Worksheet: Hg053001
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	3P			10mL	50mL	
0.2 µg/L	G12	0.100				
1.0	HW	0.500				
2.0	P3	1.000				
5.0	A1	2.500				
10.0	Z	5.000				
ICV	Gd	0.125	2.5			
CCV	A27	0.250	5.0			
ICB/CCB	E7/AP					
MB1	R			0.30		PBS192 9.50L 100.0
LC1	55	*	*	0.32		LCSS192
0805L084-001	2V			0.34		
001R	RU			0.33		
001S	1721	0.500	1.0	0.35		
001T	3H	0.500	1.0	0.33		
003	L2			0.37		
005	41			0.34		
007	522			0.34		
0805L168-001	C9			0.31		96.9
002	UT			0.37		93.2
003	OLN			0.38		91.7
004	X0			0.40		96.3
005	3C			0.42		95.2
0805L116-001	194			0.36		100.0
003	C48			0.35		
005	L53			0.35		
007	B6			0.34		

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-78-14B	5/29/08 1100
ICV/CCV/LCS	US6072-78-15A	1

Reviewed By/Date: [signature] 6/3/08

see book # 9368 for std traceability information

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

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: Cen
Date 5/29/08
Start Time/Temp:
End Time/Temp: see page 017

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

Prep Batch: 08C0092
Worksheet: HG053001
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.
08051177-001	3			0.30	50mL	100.0
001R	TR			0.31		
001S	AN	0.050	10.0	0.30		
002	H3			0.32		
003	P18			0.32		
004	CX			0.30		
08051180- 001	7IL			0.31		
001R	CTR			0.36		
001S	P5	0.050	10.0	0.36		

05/29/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 017	

Reviewed By/Date: [signature] 6/3/08

see book # 9348 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

nville Laboratory Use Only

28051177

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000024

nt TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7Day

605-08 5-22-08

Rec'd 5-22-08 Date Due ~~5-29-08~~

Refrigerator #			A														
#/Type Container	Liquid		3														
	Solid																
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal	CN	Cyanide					

Lionville Laboratory Use Only

IDX EB Soil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids TCLP Leachate Wipe Other Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		8260	8PCB				Met①		IIGN				
	001	J16VC6			OIL	5-14-08	1245		X	X				X		X				
	002	J16VC7				5-14-08	1320		X	X				X		X				
	003	J16VC8				5-14-08	1410		X	X				X		X				
	004	J16VC9				5-14-08	1435		X	X				X		X				

cial Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
D Eq	[illegible] Hernandez	5-22-08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE MASTER	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-022	Page 1 of 1
lector . Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9F Data Turnaround ~~15~~ Days 7 RTC
iect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No. AFS-06-004	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment Fed Ex	
nped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A 080284	Bill of Lading/Air Bill No. See OSPL	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						

Sample No.	Matrix *	Sample Date	Sample Time									DRUM PIN#
3VC6	OTHER LIQUID	5/14/08	1245	X	X	X	X		J16UD6			-0475
3VC7	OTHER LIQUID	5/14/08	1320	X	X	X	X		J16UD7			-0567

RTC 5/14/08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Blawrence	1500 5-14-08	RTCoffman/RTCoffman	1500 5/14/08
RTCoffman/RTCoffman	1600 5/14/08	Reefer #1A, 1060 Bldg	1600 5/14/08
60/1A 0830	MAY 21 2008	MSTankovich	0830 MAY 21 2008
MSTankovich	0830 MAY 21 2008	Fed Ex	
Fed Ex	5-22-08 0945	Victor Hernandez	5-22-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC JRA

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

00000025

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-023	Page 1 of 1
ollector B. Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9F Data Turnaround ~~15~~ Days 7 RTC
oject Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
s Chest No. AFS-06-004	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment Fed Ex	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080284	Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					

RTC 5/14/08

Sample No.	Matrix *	Sample Date	Sample Time									DRUM PINB
6VC8	OTHER LIQUID	5/14/08	1410	X	X	X	X			J16UD8		-0239
6VC9	OTHER LIQUID	5/14/08	1435	X	X	X	X			J16UD9		-0238

CHAIN OF POSSESSION	Sign/Print Names	
inquished By/Removed From B Lawrence BL Date/Time 1500 5-14-08	Received By/Stored In RT Coffman / RT COFFMAN Date/Time 1500 5/14/08	
inquished By/Removed From RT COFFMAN / RT Coffman Date/Time 1600 5/14/08	Received By/Stored In REFER #1A, 1060 BLDG. Date/Time 1600 5/14/08	
inquished By/Removed From 60/1A 0830 Date/Time MAY 21 2008	Received By/Stored In MS Stankovich Date/Time 0830 MAY 21 2008	
inquished By/Removed From MS Stankovich Date/Time 0830 MAY 21 2008	Received By/Stored In Fed Ex Date/Time	
inquished By/Removed From Fed Ex Date/Time 5-22-08 0945	Received By/Stored In Ted Kennedy Date/Time 5-22-08 0945	
inquished By/Removed From Date/Time	Received By/Stored In Date/Time	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 – Total Sr

RTC JKD

Matrix *

S=Soil
SB=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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000026

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-088

Date: 5/22/08

LvLI Batch #: 08052177

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7900 1913 4213
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 2.5	°C	Cooler # AFS-06-004
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☑ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-088 F1230

RECEIVED JUN 2008

DATE RECEIVED: 05/22/08 LVL LOT # :0805L177

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VC6						
IGNITABILITY	001	OI	08LFPA11	05/14/08	05/23/08	05/23/08
J16VC7						
IGNITABILITY	002	OI	08LFPA11	05/14/08	05/23/08	05/23/08
J16VC8						
IGNITABILITY	003	OI	08LFPA11	05/14/08	05/23/08	05/23/08
J16VC9						
IGNITABILITY	004	OI	08LFPA11	05/14/08	05/23/08	05/23/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088 K1230
LVL#: 0805L177

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 4 oil samples.

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

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

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

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

5. The Laboratory Control Samples (LCS) were within the method criteria.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/10/08
Date

njp\i05-177

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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: TNU-HANFORD RC-088 K1230
LVL#: 0805L177

W.O.#: 11343-606-001-9999-00
Date Received: 05-22-08

Analyte:	**Observation:**
Ignitability	Samples J16VC6,J16VC6 duplicate, J16VC7, J16VC8 and J16VC9 did not ignite. Sample were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 82°F.

njp\i05-177.pt2

LIONVILLE LABORATORY INC.

ville Laboratory Use Only

8805L177

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000006

: TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7DAY

Rec'd 5-22-08 Date Due ~~5-29-08~~ 605-08 5-22-08

Refrigerator #			A													
#/Type Container	Liquid / Solid		3													
Volume			250													
Preservatives																
ANALYSES REQUESTED			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				TCP Metal	CN					
			Lionville Laboratory Use Only													
				0625H	0PCB					Met①		TIGN				

IX
Si
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
P/TCLP
Leachate
Pipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J16VC6			Oil	5-14-08	1245		X	X				X		X				
002	J16VC7				5-14-08	1320		X	X				X		X				
003	J16VC8				5-14-08	1410		X	X				X		X				
004	J16VC9				5-14-08	1435		X	X				X		X				

cial Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5/22/08	0945

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-088-022 | Page 1 of 1

ector . Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
ect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-06-004	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
ned To BERLINE SERVICES / LIONVILLE	Offsite Property No. A 080284		Bill of Lading/Air Bill No. See OSPL

Price Code: 9F

Data Turnaround: ~~15~~ Days 7 RTC

SSIBLE SAMPLE ~~HAZARDS/REMARKS~~

tential Radioactive contamination, potential beryllium ntamination

ecial Handling and/or Storage

ne

SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					
Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	P	P	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					

RTC 5/14/08

Sample No.	Matrix *	Sample Date	Sample Time									DRUM PIN#
VC6	OTHER LIQUID	5/14/08	1245	X	X	X	X			J16VD6		-0475
VC7	OTHER LIQUID	5/14/08	1320	X	X	X	X			J16VD7		-0567

CHAIN OF POSSESSION	Sign/Print Names
nquished By/Removed From: B Lawrence Date/Time 1500 5-14-08	Received By/Stored In: RT Coffman/RT Coffman Date/Time 1500 5/14/08
nquished By/Removed From: RT Coffman/RT Coffman Date/Time 1600 5/14/08	Received By/Stored In: Reefer #1A, 1060 Bldg Date/Time 1600 5/14/08
nquished By/Removed From: 60/1A 0830 Date/Time MAY 21 2008	Received By/Stored In: 0830 MSTankovich Date/Time MAY 21 2008
nquished By/Removed From: 0830 MSTankovich Date/Time MAY 21 2008	Received By/Stored In: Fed Ex Date/Time
nquished By/Removed From: Fed Ex 5-22-08 0945 Date/Time	Received By/Stored In: Victor Hernandez 5-22-08 0945 Date/Time
nquished By/Removed From: Date/Time	Received By/Stored In: Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RTC JRA

Matrix *

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-023 | Page 1 of 1

lector . Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
ject Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-06-004	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
pped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080284		Bill of Lading/Air Bill No. See OSPC

Price Code: 9F

Data Turnaround: ~~15~~ Days 7 RC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						DRUM PIN

RC 5/14/08

Sample No.	Matrix *	Sample Date	Sample Time									
6VC8	OTHER LIQUID	5/14/08	1410	X	X	X	X			J16UD8		-0239
6VC9	OTHER LIQUID	5/14/08	1435	X	X	X	X			J16UD9		-0238

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	1500 5-14-08	R Coffman / RT COFFMAN	1500 5/14/08
RT Coffman / RT Coffman	1600 5/14/08	REFER #1A, 1060 BLDG.	1600 5/14/08
1060/1A	0830 MAY 21 2008	MS Stankovich	0830 MAY 21 2008
MS Stankovich, WCH	0830 MAY 21 2008	Fed Ex	
Fed Ex	5-22-08 0945	[illegible]	5-22-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

RC JKD

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

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

CH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 5/22/08

LvLI Batch #: 08052177

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7900 1913 4213
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.5	°C	Cooler # AFS-06-004
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.