0078925

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 9/23/08 Initials/Date
Kathy Wendt	H4-21	KW 9/23/08 Initials/Date

COMMENTS:

SDG K1299 **SAF-RC-088**

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
OCT 20 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
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Toll Free (800) 841-5487
www.eberlineservices.com

September 5, 2008

RECEIVED
SEP 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-08-187-7872, SDG K1299

Dear Ms. Kessner:

Enclosed is the data report for six other liquid samples designated under SAF No. RC-088 received at Eberline Services on August 27, 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/jag

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1299 was composed of six other liquid samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other Liquids.

Sample J177N2 had two phases. The two phases were separated and analyzed as separate sample fractions: J177N2-A an oil fraction and J177N2-B an unknown liquid fraction.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on September 5, 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 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

09/05/08

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1299

SDG	7872
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1299

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

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

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Prepared by

Melissa Mann

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/04/08

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/04/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

LAB SAMPLE SUMMARY

SDG 7872
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R808187-01	J178L0	618-7 Burial Grounds	LIQUID		RC-088	RC-088-061	08/15/08 08:40
R808187-02	J178L1		LIQUID		RC-088	RC-088-061	08/15/08 08:50
R808187-03	J178L2		LIQUID		RC-088	RC-088-061	08/15/08 09:15
R808187-04	J178L3		LIQUID		RC-088	RC-088-061	08/15/08 09:25
R808187-05	J177N2-A		LIQUID		RC-088	RC-088-058	08/14/08 09:00
R808187-06	J177N2-B		LIQUID		RC-088	RC-088-058	08/14/08 09:00
R808187-07	J177N3		LIQUID		RC-088	RC-088-058	08/14/08 09:25
R808187-08	Lab Control Sample		LIQUID		RC-088		
R808187-09	Method Blank		LIQUID		RC-088		
R808187-10	Duplicate (R808187-02)		LIQUID		RC-088		08/15/08 08:50

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

SDG 7872
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

C BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
372	RC-088-058	J177N2-A	LIQUID		398 mL		08/27/08	13	R808187-05	7872-005
		J177N2-B	LIQUID		132 mL		08/27/08	13	R808187-06	7872-006
		J177N3	LIQUID		495 mL		08/27/08	13	R808187-07	7872-007
	RC-088-061	J178L0	LIQUID		520 mL		08/27/08	12	R808187-01	7872-001
		J178L1	LIQUID		488 mL		08/27/08	12	R808187-02	7872-002
		J178L2	LIQUID		496 mL		08/27/08	12	R808187-03	7872-003
		J178L3	LIQUID		571 mL		08/27/08	12	R808187-04	7872-004
		Method Blank	LIQUID						R808187-09	7872-009
		Lab Control Sample	LIQUID						R808187-08	7872-008
		Duplicate (R808187-02)	LIQUID		488 mL		08/27/08	12	R808187-10	7872-010

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

SDG 7872
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

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	6160-092	8.0	7			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6160-092	8.0	7			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6160-092	8.0	7			1	1	1/1		
U	LIQUID	Uranium in Liquid	6160-092	8.0	7			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6160-092	10.4	7			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6160-092	20.6	7			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6160-092	11.0	7			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6160-092	7.0	7			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 Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

SDG 7872
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
308187-01	J178L0			7872-001	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/15/08	618-7 Burial Grounds		LIQUID	7872-001	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-061	RC-088		7872-001	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-001	GAM		08/29/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-001	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-001	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-001	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-001	U		08/30/08	09/02/08	BW	Uranium in Liquid
308187-02	J178L1			7872-002	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/15/08			LIQUID	7872-002	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-061	RC-088		7872-002	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-002	GAM		08/29/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-002	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-002	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-002	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-002	U		08/30/08	09/02/08	BW	Uranium in Liquid
108187-03	J178L2			7872-003	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/15/08			LIQUID	7872-003	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-061	RC-088		7872-003	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-003	GAM		08/29/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-003	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-003	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-003	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-003	U		08/30/08	09/02/08	BW	Uranium in Liquid
08187-04	J178L3			7872-004	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/15/08			LIQUID	7872-004	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-061	RC-088		7872-004	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-004	GAM		08/29/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-004	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-004	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-004	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-004	U		08/30/08	09/02/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

SDG 7872
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
308187-05	J177N2-A			7872-005	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/14/08			LIQUID	7872-005	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-058	RC-088		7872-005	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-005	GAM		08/29/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-005	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-005	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-005	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-005	U		09/02/08	09/02/08	BW	Uranium in Liquid
308187-06	J177N2-B			7872-006	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/14/08			LIQUID	7872-006	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-058	RC-088		7872-006	AM		09/02/08	09/02/08	BW	Americium 241 in Liquid
				7872-006	GAM		09/01/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-006	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-006	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-006	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-006	U		09/03/08	09/02/08	BW	Uranium in Liquid
308187-07	J177N3			7872-007	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/14/08			LIQUID	7872-007	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08	RC-088-058	RC-088		7872-007	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-007	GAM		09/01/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-007	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-007	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-007	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-007	U		08/30/08	09/02/08	BW	Uranium in Liquid
308187-08	Lab Control Sample			7872-008	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
			LIQUID	7872-008	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
		RC-088		7872-008	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-008	GAM		09/01/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-008	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-008	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-008	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-008	U		09/01/08	09/02/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

SDG 7872
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
308187-09	Method Blank			7872-009	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
			LIQUID	7872-009	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
		RC-088		7872-009	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-009	GAM		09/01/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-009	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-009	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-009	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-009	U		08/30/08	09/02/08	BW	Uranium in Liquid
308187-10	Duplicate (R808187-02)			7872-010	93A/93		09/01/08	09/02/08	BW	Gross Alpha in Liquid
08/15/08			LIQUID	7872-010	93B/93		09/01/08	09/02/08	BW	Gross Beta in Liquid
08/27/08		RC-088		7872-010	AM		09/01/08	09/02/08	BW	Americium 241 in Liquid
				7872-010	GAM		09/01/08	09/03/08	CSS	Gamma Scan in Liquid
				7872-010	PU		09/02/08	09/03/08	BW	Plutonium-238,239/240, Liquid
				7872-010	SR		08/29/08	09/02/08	BW	Total Strontium in Liquids
				7872-010	TH		09/02/08	09/02/08	BW	Thorium, Isotopic in Liquid
				7872-010	U		08/30/08	09/02/08	BW	Uranium in Liquid

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	7			1	1	1	10
93B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	7			1	1	1	10
AM	RC-088	Americium 241 in Liquid	AMCMISO_IE_PLATE_AEA	7			1	1	1	10
GAM	RC-088	Gamma Scan in Liquid	GAMMA_GS	7			1	1	1	10
PU	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	7			1	1	1	10
SR	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	7			1	1	1	10
TH	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	7			1	1	1	10
U	RC-088	Uranium in Liquid	UISO_PLATE_AEA	7			1	1	1	10
TOTALS				56			8	8	8	80

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-009 Method Blank

METHOD BLANK

SDG	7872	Client/Case no	Hanford	SDG K1299	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-09	Client sample id	Method Blank		
Dept sample id	7872-009	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	-2.30	3.4	8.30	10.0	U	93A
Gross Beta	12587-47-2	0.838	3.6	6.00	15.0	U	93B
Total Strontium	SR-RAD	0.002	0.11	0.231	1.00	U	SR
Americium 241	14596-10-2	0.045	0.091	0.347	1.00	U	AM
Thorium 228	14274-82-9	0.079	0.16	0.292	1.00	U	TH
Thorium 230	14269-63-7	0	0.16	0.252	1.00	U	TH
Thorium 232	TH-232	0.026	0.053	0.201	1.00	U	TH
Uranium 233/234	U-233/234	0	0.044	0.084	1.00	U	U
Uranium 235	15117-96-1	0.027	0.027	0.102	1.00	U	U
Uranium 238	U-238	0.011	0.022	0.084	1.00	U	U
Plutonium 238	13981-16-3	0.070	0.21	0.386	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.035	0.070	0.267	1.00	U	PU
Potassium 40	13966-00-2	U		1.08		U	GAM
Cobalt 60	10198-40-0	U		0.067	0.050	U	GAM
Cesium 137	10045-97-3	U		0.050	0.050	U	GAM
Radium 226	13982-63-3	U		0.106	0.100	U	GAM
Radium 228	15262-20-1	U		0.395	0.200	U	GAM
Europium 152	14683-23-9	U		0.141	0.100	U	GAM
Europium 154	15585-10-1	U		0.177	0.100	U	GAM
Europium 155	14391-16-3	U		0.126	0.100	U	GAM
Thorium 228	14274-82-9	U		0.081		U	GAM
Thorium 232	TH-232	U		0.395		U	GAM
Uranium 235	15117-96-1	U		0.191		U	GAM
Uranium 238	U-238	U		6.16		U	GAM
Americium 241	14596-10-2	U		0.207		U	GAM

618-7 Burial Ground - Other Liquids

QC-BLANK #67056

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-008

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7872

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1299

Contract No. S00W235A00

Lab sample id R808187-08

Dept sample id 7872-008

Client sample id Lab Control Sample

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	135	19	8.31	10.0		93A	112	4.5	120	54-146	70-130
Gross Beta	111	8.1	5.93	15.0		93B	111	4.4	100	79-121	70-130
Total Strontium	10.4	0.54	0.223	1.00		SR	10.2	0.41	102	81-119	80-120
Americium 241	24.3	2.8	0.302	1.00		AM	22.4	0.90	108	76-124	80-120
Thorium 228	0.027	0.16	0.303	1.00	U	TH					
Thorium 230	37.7	3.3	0.261	1.00		TH	41.6	1.7	91	83-117	80-120
Thorium 232	0.027	0.055	0.209	1.00	U	TH					
Uranium 233/234	17.4	1.8	0.803	1.00		U	19.3	0.77	90	81-119	80-120
Uranium 235	13.4	1.5	0.194	1.00		U	15.7	0.63	85	81-119	80-120
Uranium 238	18.0	1.9	0.771	1.00		U	21.0	0.84	86	82-118	80-120
Plutonium 238	28.1	3.2	0.425	1.00		PU	25.6	1.0	110	76-124	80-120
Plutonium 239/240	29.7	3.3	0.294	1.00		PU	29.0	1.2	102	78-122	80-120
Cobalt 60	2.36	0.15	0.093	0.050		GAM	2.44	0.098	97	85-115	80-120
Cesium 137	2.95	0.15	0.105	0.050		GAM	2.79	0.11	106	85-115	80-120

618-7 Burial Ground - Other Liquids

QC-LCS #67055

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-010 J178L1

DUPLICATE

SDG	7872	Client/Case no	Hanford SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R808187-10	Lab sample id	R808187-02
Dept sample id	7872-010	Dept sample id	7872-002
		Received	08/27/08
Client sample id	J178L1		
Location/Matrix	LIQUID		
Collected/Volume	08/15/08 08:50 488 mL		
Custody/SAF No	RC-088-061 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	4.36	2.1	2.06	10.0		93A	3.75	2.2	2.78		15	121	0.4
Gross Beta	2.51	4.9	7.91	15.0	U	93B	1.96	3.3	5.32	U	-		0.2
Total Strontium	0.013	0.11	0.220	1.00	U	SR	-0.013	0.098	0.206	U	-		0.4
Americium 241	0.078	0.23	0.373	1.00	U	AM	0	0.16	0.315	U	-		0.6
Thorium 228	0	0.12	0.336	1.00	U	TH	-0.039	0.24	0.528	U	-		0.3
Thorium 230	0.364	0.24	0.232	1.00		TH	0	0.16	0.300	U	200	239	2.5
Thorium 232	0.030	0.061	0.232	1.00	U	TH	0	0.079	0.300	U	-		0.6
Uranium 233/234	1.48	0.26	0.090	1.00		U	1.43	0.24	0.074		3	40	0.3
Uranium 235	0.137	0.069	0.087	1.00		U	0.140	0.070	0.089		2	108	0.1
Uranium 238	0.916	0.19	0.072	1.00		U	1.13	0.22	0.074		21	46	1.4
Plutonium 238	0	0.11	0.275	1.00	U	PU	-0.045	0.18	0.426	U	-		0.4
Plutonium 239/240	0	0.057	0.220	1.00	U	PU	0	0.089	0.340	U	-		0
Potassium 40	U		1.38		U	GAM	U		1.00	U	-		0.4
Cobalt 60	U		0.048	0.050	U	GAM	U		0.036	U	-		0.4
Cesium 137	U		0.049	0.050	U	GAM	U		0.036	U	-		0.4
Radium 226	U		0.110	0.100	U	GAM	U		0.081	U	-		0.4
Radium 228	U		0.226	0.200	U	GAM	U		0.169	U	-		0.4
Europium 152	U		0.131	0.100	U	GAM	U		0.096	U	-		0.4
Europium 154	U		0.142	0.100	U	GAM	U		0.105	U	-		0.4
Europium 155	U		0.104	0.100	U	GAM	U		0.078	U	-		0.4
Thorium 228	U		0.272		U	GAM	U		0.060	U	-		1.5
Thorium 232	U		0.226		U	GAM	U		0.169	U	-		0.4
Uranium 235	U		0.198		U	GAM	U		0.146	U	-		0.4
Uranium 238	U		5.39		U	GAM	U		4.20	U	-		0.3
Americium 241	U		0.106		U	GAM	U		0.078	U	-		0.4

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-010 J178L1

DUPLICATE, cont.

SDG	7872		Client/Case no	Hanford	SDG K1299
Contact	Melissa C. Mannion		Contract	No. S00W235A00	
DUPLICATE		ORIGINAL			
Lab sample id	R808187-10	Lab sample id	R808187-02	Client sample id	J178L1
Dept sample id	7872-010	Dept sample id	7872-002	Location/Matrix	LIQUID
		Received	08/27/08	Collected/Volume	08/15/08 08:50 488 mL
				Custody/SAF No	RC-088-061 RC-088

QC-DUP#2 67057

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-001 J178L0

DATA SHEET

SDG	7872	Client/Case no	Hanford	SDG K1299	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-01	Client sample id	J178L0		
Dept sample id	7872-001	Location/Matrix	618-7 Burial Grounds	LIQUID	
Received	08/27/08	Collected/Volume	08/15/08 08:40	520 mL	
		Custody/SAF No	RC-088-061	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	1.24	1.4	2.18	10.0	U	93A
Gross Beta	12587-47-2	-1.54	3.0	5.42	15.0	U	93B
Total Strontium	SR-RAD	0.022	0.13	0.245	1.00	U	SR
Americium 241	14596-10-2	-0.039	0.16	0.430	1.00	U	AM
Thorium 228	14274-82-9	0.047	0.28	0.522	1.00	U	TH
Thorium 230	14269-63-7	-0.188	0.096	0.360	1.00	U	TH
Thorium 232	TH-232	0	0.094	0.360	1.00	U	TH
Uranium 233/234	U-233/234	0.311	0.11	0.070	1.00		U
Uranium 235	15117-96-1	0.022	0.022	0.085	1.00	U	U
Uranium 238	U-238	0.192	0.092	0.070	1.00		U
Plutonium 238	13981-16-3	0	0.25	0.506	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.082	0.315	1.00	U	PU
Potassium 40	13966-00-2	U		0.788		U	GAM
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.027	0.050	U	GAM
Radium 226	13982-63-3	U		0.090	0.100	U	GAM
Radium 228	15262-20-1	U		0.186	0.200	U	GAM
Europium 152	14683-23-9	U		0.070	0.100	U	GAM
Europium 154	15585-10-1	U		0.069	0.100	U	GAM
Europium 155	14391-16-3	U		0.060	0.100	U	GAM
Thorium 228	14274-82-9	U		0.051		U	GAM
Thorium 232	TH-232	U		0.186		U	GAM
Uranium 235	15117-96-1	U		0.114		U	GAM
Uranium 238	U-238	U		3.15		U	GAM
Americium 241	14596-10-2	U		0.059		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-002 J178L1

DATA SHEET

SDG	7872	Client/Case no	Hanford		SDG_K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-02	Client sample id	J178L1		
Dept sample id	7872-002	Location/Matrix			LIQUID
Received	08/27/08	Collected/Volume	08/15/08 08:50	488 mL	
		Custody/SAF No	RC-088-061	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	3.75	2.2	2.78	10.0		93A
Gross Beta	12587-47-2	1.96	3.3	5.32	15.0	U	93B
Total Strontium	SR-RAD	-0.013	0.098	0.206	1.00	U	SR
Americium 241	14596-10-2	0	0.16	0.315	1.00	U	AM
Thorium 228	14274-82-9	-0.039	0.24	0.528	1.00	U	TH
Thorium 230	14269-63-7	0	0.16	0.300	1.00	U	TH
Thorium 232	TH-232	0	0.079	0.300	1.00	U	TH
Uranium 233/234	U-233/234	1.43	0.24	0.074	1.00		U
Uranium 235	15117-96-1	0.140	0.070	0.089	1.00		U
Uranium 238	U-238	1.13	0.22	0.074	1.00		U
Plutonium 238	13981-16-3	-0.045	0.18	0.426	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.089	0.340	1.00	U	PU
Potassium 40	13966-00-2	U		1.00		U	GAM
Cobalt 60	10198-40-0	U		0.036	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.050	U	GAM
Radium 226	13982-63-3	U		0.081	0.100	U	GAM
Radium 228	15262-20-1	U		0.169	0.200	U	GAM
Europium 152	14683-23-9	U		0.096	0.100	U	GAM
Europium 154	15585-10-1	U		0.105	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	U		0.060		U	GAM
Thorium 232	TH-232	U		0.169		U	GAM
Uranium 235	15117-96-1	U		0.146		U	GAM
Uranium 238	U-238	U		4.20		U	GAM
Americium 241	14596-10-2	U		0.078		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-003 J178L2

DATA SHEET

SDG	7872	Client/Case no	Hanford SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808187-03	Client sample id	J178L2
Dept sample id	7872-003	Location/Matrix	LIQUID
Received	08/27/08	Collected/Volume	08/15/08 09:15 496 mL
		Custody/SAF No	RC-088-061 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	1.6	2.17	10.0	U	93A
Gross Beta	12587-47-2	2.56	5.2	8.37	15.0	U	93B
Total Strontium	SR-RAD	-0.011	0.10	0.216	1.00	U	SR
Americium 241	14596-10-2	0.093	0.14	0.258	1.00	U	AM
Thorium 228	14274-82-9	0.368	0.28	0.440	1.00	U	TH
Thorium 230	14269-63-7	0	0.18	0.351	1.00	U	TH
Thorium 232	TH-232	0.046	0.092	0.351	1.00	U	TH
Uranium 233/234	U-233/234	1.04	0.22	0.082	1.00		U
Uranium 235	15117-96-1	0.052	0.052	0.100	1.00	U	U
Uranium 238	U-238	0.700	0.18	0.082	1.00		U
Plutonium 238	13981-16-3	0	0.071	0.272	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.071	0.272	1.00	U	PU
Potassium 40	13966-00-2	U		0.717		U	GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.050	U	GAM
Radium 226	13982-63-3	U		0.064	0.100	U	GAM
Radium 228	15262-20-1	U		0.158	0.200	U	GAM
Europium 152	14683-23-9	U		0.091	0.100	U	GAM
Europium 154	15585-10-1	U		0.110	0.100	U	GAM
Europium 155	14391-16-3	U		0.081	0.100	U	GAM
Thorium 228	14274-82-9	U		0.054		U	GAM
Thorium 232	TH-232	U		0.158		U	GAM
Uranium 235	15117-96-1	U		0.149		U	GAM
Uranium 238	U-238	U		4.40		U	GAM
Americium 241	14596-10-2	U		0.144		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-004 J178L3

DATA SHEET

SDG	7872	Client/Case no	Hanford SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808187-04	Client sample id	J178L3
Dept sample id	7872-004	Location/Matrix	LIQUID
Received	08/27/08	Collected/Volume	08/15/08 09:25 571 mL
		Custody/SAF No	RC-088-061 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	1.54	1.3	1.74	10.0	U	93A
Gross Beta	12587-47-2	1.83	2.7	4.32	15.0	U	93B
Total Strontium	SR-RAD	-0.006	0.10	0.210	1.00	U	SR
Americium 241	14596-10-2	0	0.18	0.369	1.00	U	AM
Thorium 228	14274-82-9	0	0.13	0.321	1.00	U	TH
Thorium 230	14269-63-7	0.033	0.13	0.256	1.00	U	TH
Thorium 232	TH-232	0	0.067	0.256	1.00	U	TH
Uranium 233/234	U-233/234	0.386	0.14	0.092	1.00		U
Uranium 235	15117-96-1	0.070	0.047	0.089	1.00	U	U
Uranium 238	U-238	0.299	0.12	0.107	1.00		U
Plutonium 238	13981-16-3	-0.054	0.054	0.260	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.054	0.208	1.00	U	PU
Potassium 40	13966-00-2	U		1.88		U	GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.065	0.050	U	GAM
Radium 226	13982-63-3	U		0.158	0.100	U	GAM
Radium 228	15262-20-1	U		0.305	0.200	U	GAM
Europium 152	14683-23-9	U		0.195	0.100	U	GAM
Europium 154	15585-10-1	U		0.206	0.100	U	GAM
Europium 155	14391-16-3	U		0.154	0.100	U	GAM
Thorium 228	14274-82-9	U		0.124		U	GAM
Thorium 232	TH-232	U		0.305		U	GAM
Uranium 235	15117-96-1	U		0.283		U	GAM
Uranium 238	U-238	U		7.72		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-005 J177N2-A

DATA SHEET

SDG	7872	Client/Case no	Hanford	SDG K1299	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-05	Client sample id	J177N2-A		
Dept sample id	7872-005	Location/Matrix		LIQUID	
Received	08/27/08	Collected/Volume	08/14/08 09:00	398 mL	
		Custody/SAF No	RC-088-058	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	31.6	5.3	2.36	10.0		93A
Gross Beta	12587-47-2	21.8	4.9	6.01	15.0		93B
Total Strontium	SR-RAD	-0.100	0.11	0.242	1.00	U	SR
Americium 241	14596-10-2	0	0.20	0.391	1.00	U	AM
Thorium 228	14274-82-9	0	0.13	0.308	1.00	U	TH
Thorium 230	14269-63-7	0.224	0.26	0.307	1.00	U	TH
Thorium 232	TH-232	0	0.064	0.245	1.00	U	TH
Uranium 233/234	U-233/234	13.5	1.5	0.319	1.00		U
Uranium 235	15117-96-1	1.40	0.39	0.205	1.00		U
Uranium 238	U-238	8.93	1.1	0.297	1.00		U
Plutonium 238	13981-16-3	0.024	0.098	0.187	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.187	1.00	U	PU
Potassium 40	13966-00-2	U		0.363		U	GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	U		0.032	0.050	U	GAM
Radium 226	13982-63-3	U		0.061	0.100	U	GAM
Radium 228	15262-20-1	U		0.125	0.200	U	GAM
Europium 152	14683-23-9	U		0.078	0.100	U	GAM
Europium 154	15585-10-1	U		0.099	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	U		0.045		U	GAM
Thorium 232	TH-232	U		0.125		U	GAM
Uranium 235	15117-96-1	U		0.862		U	GAM
Uranium 238	U-238	U		5.77		U	GAM
Americium 241	14596-10-2	U		0.054		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

DATA SHEET, cont

SDG	7872	Client/Case no	Hanford		SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-05	Client sample id	J177N2-A		
Dept sample id	7872-005	Location/Matrix			LIQUID
Received	08/27/08	Collected/Volume	08/14/08 09:00	398 mL	
		Custody/SAF No	RC-088-058	RC-088	

Oil Fraction

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-006 J177N2-B

DATA SHEET

SDG	7872	Client/Case no	Hanford SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808187-06	Client sample id	J177N2-B
Dept sample id	7872-006	Location/Matrix	LIQUID
Received	08/27/08	Collected/Volume	08/14/08 09:00 132 mL
		Custody/SAF No	RC-088-058 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	1370	33	2.37	10.0		93A
Gross Beta	12587-47-2	772	20	4.69	15.0		93B
Total Strontium	SR-RAD	-0.022	0.094	0.201	1.00	U	SR
Americium 241	14596-10-2	0.031	0.18	0.338	1.00	U	AM
Thorium 228	14274-82-9	0.256	0.21	0.286	1.00	U	TH
Thorium 230	14269-63-7	0.574	0.26	0.163	1.00		TH
Thorium 232	TH-232	0.043	0.043	0.163	1.00	U	TH
Uranium 233/234	U-233/234	681	69	0.950	1.00		U
Uranium 235	15117-96-1	8.67	7.1	15.2	1.00	U	U
Uranium 238	U-238	458	46	0.903	1.00		U
Plutonium 238	13981-16-3	0.029	0.11	0.220	1.00	U	PU
Plutonium 239/240	PU-239/240	0.029	0.11	0.220	1.00	U	PU
Potassium 40	13966-00-2	U		0.608		U	GAM
Cobalt 60	10198-40-0	U		0.056	0.050	U	GAM
Cesium 137	10045-97-3	U		0.088	0.050	U	GAM
Radium 226	13982-63-3	U		0.162	0.100	U	GAM
Radium 228	15262-20-1	U		0.284	0.200	U	GAM
Europium 152	14683-23-9	U		0.227	0.100	U	GAM
Europium 154	15585-10-1	U		0.173	0.100	U	GAM
Europium 155	14391-16-3	U		0.464	0.100	U	GAM
Thorium 228	14274-82-9	U		0.524		U	GAM
Thorium 232	TH-232	U		0.284		U	GAM
Uranium 235	15117-96-1	26.9	0.57	0.546			GAM
Uranium 238	U-238	518	20	11.2			GAM
Americium 241	14596-10-2	U		0.363		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-006 J177N2-B

DATA SHEET, cont

SDG	7872	Client/Case no	Hanford		SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808187-06	Client sample id	J177N2-B		
Dept sample id	7872-006	Location/Matrix			LIQUID
Received	08/27/08	Collected/Volume	08/14/08 09:00	132 mL	
		Custody/SAF No	RC-088-058	RC-088	

Unknown Liquid Fraction

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

7872-007 J177N3

DATA SHEET

SDG	7872	Client/Case no	Hanford SDG K1299
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808187-07	Client sample id	J177N3
Dept sample id	7872-007	Location/Matrix	LIQUID
Received	08/27/08	Collected/Volume	08/14/08 09:25 495 mL
		Custody/SAF No	RC-088-058 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	7.29	2.8	2.35	10.0		93A
Gross Beta	12587-47-2	9.84	4.9	7.55	15.0		93B
Total Strontium	SR-RAD	0.142	0.15	0.262	1.00	U	SR
Americium 241	14596-10-2	0	0.079	0.303	1.00	U	AM
Thorium 228	14274-82-9	0.027	0.16	0.362	1.00	U	TH
Thorium 230	14269-63-7	0.054	0.16	0.206	1.00	U	TH
Thorium 232	TH-232	0	0.054	0.206	1.00	U	TH
Uranium 233/234	U-233/234	1.28	0.26	0.108	1.00		U
Uranium 235	15117-96-1	0.123	0.082	0.104	1.00		U
Uranium 238	U-238	1.10	0.23	0.086	1.00		U
Plutonium 238	13981-16-3	0.127	0.17	0.325	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.085	0.325	1.00	U	PU
Potassium 40	13966-00-2	U		0.921		U	GAM
Cobalt 60	10198-40-0	U		0.039	0.050	U	GAM
Cesium 137	10045-97-3	U		0.038	0.050	U	GAM
Radium 226	13982-63-3	U		0.120	0.100	U	GAM
Radium 228	15262-20-1	U		0.196	0.200	U	GAM
Europium 152	14683-23-9	U		0.106	0.100	U	GAM
Europium 154	15585-10-1	U		0.115	0.100	U	GAM
Europium 155	14391-16-3	U		0.100	0.100	U	GAM
Thorium 228	14274-82-9	U		0.081		U	GAM
Thorium 232	TH-232	U		0.196		U	GAM
Uranium 235	15117-96-1	U		0.204		U	GAM
Uranium 238	U-238	U		5.50		U	GAM
Americium 241	14596-10-2	U		0.105		U	GAM

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test AM Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
reparation batch 6160-092						
308187-01			7872-001	J178L0	U	
308187-02			7872-002	J178L1	U	
308187-03			7872-003	J178L2	U	
308187-04			7872-004	J178L3	U	
308187-05			7872-005	J177N2-A	U	
308187-06			7872-006	J177N2-B	U	
308187-07			7872-007	J177N3	U	
308187-08			7872-008	Lab Control Sample	ok	
308187-09			7872-009	Method Blank	U	
308187-10			7872-010	Duplicate (R808187-02)	-	U

ominal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Ground - Other Liquids

ETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6160-092			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 092													
108187-01			J178L0	0.430	0.500			57		101			17	08/30/08	09/01	SS-027
108187-02			J178L1	0.315	0.540			57		101			17	08/30/08	09/01	SS-028
108187-03			J178L2	0.258	0.510			55		202			17	08/30/08	09/01	SS-032
108187-04			J178L3	0.369	0.559			43		202			17	08/30/08	09/01	SS-034
108187-05			J177N2-A	0.391	0.505			59		101			18	08/30/08	09/01	SS-040
108187-06			J177N2-B	0.338	0.575			55		114			19	08/30/08	09/02	SS-027
108187-07			J177N3	0.303	0.476			55		101			18	08/30/08	09/01	SS-051
108187-08			Lab Control Sample	0.302	0.500			61		101				08/30/08	09/01	SS-052
108187-09			Method Blank	0.347	0.500			50		101				08/30/08	09/01	SS-053
108187-10			Duplicate (R808187-02)	0.373	0.540			52		101			17	08/30/08	09/01	SS-061
ominal values and limits from method				1.00	0.500			20-105		50	100		180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test AM	Matrix LIQUID
SDG 7872	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1299	

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-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 12

AVERAGES ± 2 SD	MDA 0.343	± 0.101
FOR 10 SAMPLES	YIELD 54	± 10

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test PU Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
reparation batch 6160-092								
308187-01			7872-001	J178L0	U		U	
308187-02			7872-002	J178L1	U		U	
308187-03			7872-003	J178L2	U		U	
308187-04			7872-004	J178L3	U		U	
308187-05			7872-005	J177N2-A	U		U	
308187-06			7872-006	J177N2-B	U		U	
308187-07			7872-007	J177N3	U		U	
308187-08			7872-008	Lab Control Sample	ok		ok	
308187-09			7872-009	Method Blank	U		U	
308187-10			7872-010	Duplicate (R808187-02)	-	U	-	U
ominal values and limits from method				RDLs (pCi/mL)	1.00		1.00	

18-7 Burial Ground - Other Liquids

ETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6160-092			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 092													
308187-01			J178L0	0.506	0.500			47		122			18	09/02/08	09/02	SS-033
308187-02			J178L1	0.426	0.540			49		123			18	09/02/08	09/02	SS-034
308187-03			J178L2	0.272	0.510			70		123			18	09/02/08	09/02	SS-040
308187-04			J178L3	0.260	0.559			73		123			18	09/02/08	09/02	SS-042
308187-05			J177N2-A	0.187	0.505			70		123			19	09/02/08	09/02	SS-051
308187-06			J177N2-B	0.220	0.575			60		123			19	09/02/08	09/02	SS-052
308187-07			J177N3	0.325	0.476			47		123			19	09/02/08	09/02	SS-053
308187-08			Lab Control Sample	0.425	0.500			46		123				09/02/08	09/02	SS-061
308187-09			Method Blank	0.386	0.500			51		124				09/02/08	09/02	SS-062
308187-10			Duplicate (R808187-02)	0.275	0.540			48		154			18	09/02/08	09/02	SS-065
ominal values and limits from method				1.00	0.500			20-105		50			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test PU	Matrix LIQUID
SDG 7872	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1299	

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	0.328	±	0.207
FOR 10 SAMPLES	YIELD	56	±	22

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test TH Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
:eparation batch 6160-092					
308187-01			7872-001	J178L0	U
308187-02			7872-002	J178L1	U
308187-03			7872-003	J178L2	U
308187-04			7872-004	J178L3	U
308187-05			7872-005	J177N2-A	U
308187-06			7872-006	J177N2-B	0.574
308187-07			7872-007	J177N3	U
308187-08			7872-008	Lab Control Sample	ok
308187-09			7872-009	Method Blank	U
308187-10			7872-010	Duplicate (R808187-02)	ok

>minal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Ground - Other Liquids

[ETHOD PERFORMANCE

AB AMPLE 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
:eparation batch 6160-092			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 092													
308187-01			J178L0	0.522	0.250			89		127			18	09/02/08	09/02	SS-032
308187-02			J178L1	0.528	0.270			87		127			18	09/02/08	09/02	SS-033
308187-03			J178L2	0.440	0.255			97		128			18	09/02/08	09/02	SS-034
308187-04			J178L3	0.321	0.279			88		190			18	09/02/08	09/02	SS-040
308187-05			J177N2-A	0.308	0.252			88		190			19	09/02/08	09/02	SS-042
308187-06			J177N2-B	0.286	0.287			97		186			19	09/02/08	09/02	SS-061
308187-07			J177N3	0.362	0.238			92		186			19	09/02/08	09/02	SS-062
308187-08			Lab Control Sample	0.303	0.250			89		186				09/02/08	09/02	SS-064
308187-09			Method Blank	0.292	0.250			94		186				09/02/08	09/02	SS-065
308187-10			Duplicate (R808187-02)	0.336	0.270			90		153			18	09/02/08	09/02	SS-064
>minal values and limits from method				1.00	0.250			20-110		100	100		180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test	TH
Matrix	LIQUID
SDG	7872
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1299

PROCEDURES	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 12

AVERAGES ± 2 SD	MDA	0.370	±	0.186
FOR 10 SAMPLES	YIELD	91	±	7

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test U Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
reparation batch 6160-092											
308187-01			7872-001	J178L0	0.311	U	0.192	162	96	11	13
308187-02			7872-002	J178L1	1.43	0.140	1.13	127	33	12	7
308187-03			7872-003	J178L2	1.04	U	0.700	149	49	7	8
308187-04			7872-004	J178L3	0.386	U	0.299	129	70	23	18
308187-05			7872-005	J177N2-A	13.5	1.40	8.93	151	25	16	5
308187-06			7872-006	J177N2-B	681	8.67 U	458	149	21	2	2
308187-07			7872-007	J177N3	1.28	0.123	1.10	116	34	11	8
308187-08			7872-008	Lab Control Sample	ok	ok	ok				
308187-09			7872-009	Method Blank	U	U	U				
308187-10			7872-010	Duplicate (R808187-02)	ok	ok	ok	162	44	15	8
ominal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
18-7 Burial Ground - Other Liquids								Averages 143		12	

:ETHOD PERFORMANCE

AB AMPLE 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
:eparation batch 6160-092			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 092													
308187-01			J178L0	0.085	0.500			99		247			15	08/29/08	08/30	SS-027
308187-02			J178L1	0.089	0.540			101		247			15	08/29/08	08/30	SS-028
308187-03			J178L2	0.100	0.510			103		247			15	08/29/08	08/30	SS-031
308187-04			J178L3	0.107	0.559			100		247			15	08/29/08	08/30	SS-032
308187-05			J177N2-A	0.319	0.505			101		114			19	08/29/08	09/02	SS-028
308187-06			J177N2-B	15.2	0.575			91		701			20	08/29/08	09/03	SS-035
308187-07			J177N3	0.108	0.476			102		248			16	08/29/08	08/30	SS-042
308187-08			Lab Control Sample	0.803	0.500			104		101				08/29/08	09/01	SS-062
308187-09			Method Blank	0.102	0.500			89		248				08/29/08	08/30	SS-052
308187-10			Duplicate (R808187-02)	0.090	0.540			91		249			15	08/29/08	08/30	SS-053
ominal values and limits from method				1.00	0.500					100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test	U
Matrix	LIQUID
SDG	7872
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

URANIUM IN LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1299

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD	MDA	1.70	±	9.50
FOR 10 SAMPLES	YIELD	98	±	11

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test SR Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
:eparation batch 6160-092						
308187-01			7872-001	J178L0	U	
308187-02			7872-002	J178L1	U	
308187-03			7872-003	J178L2	U	
308187-04			7872-004	J178L3	U	
308187-05			7872-005	J177N2-A	U	
308187-06			7872-006	J177N2-B	U	
308187-07			7872-007	J177N3	U	
308187-08			7872-008	Lab Control Sample	ok	
308187-09			7872-009	Method Blank	U	
308187-10			7872-010	Duplicate (R808187-02)	-	U

ominal values and limits from method RDLs (pCi/mL) 1.00
.8-7 Burial Ground - Other Liquids

.ETHOD PERFORMANCE

AB AMPLE 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
:eparation batch 6160-092			2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 092													
308187-01			J178L0	0.245	1.00			93		100			14	08/29/08	08/29	GRB-201
308187-02			J178L1	0.206	1.08			93		100			14	08/29/08	08/29	GRB-202
308187-03			J178L2	0.216	1.02			94		100			14	08/29/08	08/29	GRB-203
308187-04			J178L3	0.210	1.12			94		100			14	08/29/08	08/29	GRB-204
308187-05			J177N2-A	0.242	1.01			95		100			15	08/29/08	08/29	GRB-229
308187-06			J177N2-B	0.201	1.12			96		100			15	08/29/08	08/29	GRB-230
308187-07			J177N3	0.262	0.952			91		100			15	08/29/08	08/29	GRB-231
308187-08			Lab Control Sample	0.223	1.00			94		100				08/29/08	08/29	GRB-201
308187-09			Method Blank	0.231	1.00			95		100				08/29/08	08/29	GRB-232
308187-10			Duplicate (R808187-02)	0.220	1.08			95		100			14	08/29/08	08/29	GRB-201
ominal values and limits from method				1.00	1.00					100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test SR	Matrix LIQUID
SDG 7872	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1299	

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

AVERAGES ± 2 SD	MDA	0.226	±	0.039
FOR 10 SAMPLES	YIELD	94	±	3

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test 93A Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
:eparation batch 6160-092					
308187-01	93		7872-001	J178L0	U
308187-02	93		7872-002	J178L1	3.75
308187-03	93		7872-003	J178L2	U
308187-04	93		7872-004	J178L3	U
308187-05	93		7872-005	J177N2-A	31.6
308187-06	93		7872-006	J177N2-B	1370
308187-07	93		7872-007	J177N3	7.29
308187-08	93		7872-008	Lab Control Sample	ok
308187-09	93		7872-009	Method Blank	U
308187-10	93		7872-010	Duplicate (R808187-02)	ok

ominal values and limits from method RDLs (pCi/mL) 10.0
18-7 Burial Ground - Other Liquids

IETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6160-092			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 092													
308187-01	93		J178L0	2.18	0.100			3		100			17	08/29/08	09/01	GRB-216
308187-02	93		J178L1	2.78	0.108			3		100			17	08/29/08	09/01	GRB-105
308187-03	93		J178L2	2.17	0.102			2		100			17	08/29/08	09/01	GRB-107
308187-04	93		J178L3	1.74	0.119			1		100			17	08/29/08	09/01	GRB-109
308187-05	93		J177N2-A	2.36	0.101			0		100			18	08/29/08	09/01	GRB-110
308187-06	93		J177N2-B	2.37	0.112			3		100			18	08/29/08	09/01	GRB-111
308187-07	93		J177N3	2.35	0.0950			1		100			18	08/29/08	09/01	GRB-114
308187-08	93		Lab Control Sample	8.31	0.100			60		100				08/29/08	09/01	GRB-115
308187-09	93		Method Blank	8.30	0.100			62		100				08/29/08	09/01	GRB-105
308187-10	93		Duplicate (R808187-02)	2.06	0.108			2		100			17	08/29/08	09/01	GRB-107
ominal values and limits from method				10.0	0.100			5-250		100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test 93A Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont.

GROSS ALPHA IN LIQUID

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

PROCEDURES	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	3.46	±	5.13
FOR 10 SAMPLES	RESIDUE	14	±	50

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test 93B Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
reparation batch 6160-092					
308187-01	93		7872-001	J178L0	U
308187-02	93		7872-002	J178L1	U
308187-03	93		7872-003	J178L2	U
308187-04	93		7872-004	J178L3	U
308187-05	93		7872-005	J177N2-A	21.8
308187-06	93		7872-006	J177N2-B	772
308187-07	93		7872-007	J177N3	9.84
308187-08	93		7872-008	Lab Control Sample	ok
308187-09	93		7872-009	Method Blank	U
308187-10	93		7872-010	Duplicate (R808187-02)	- U

ominal values and limits from method RDLs (pCi/mL) 15.0
18-7 Burial Ground - Other Liquids

ETHOD PERFORMANCE

AB AMPLE 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
eparation batch 6160-092			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 092													
08187-01	93		J178L0	5.42	0.100			3		100			17	08/29/08	09/01	GRB-216
08187-02	93		J178L1	5.32	0.108			3		100			17	08/29/08	09/01	GRB-105
08187-03	93		J178L2	8.37	0.102			2		100			17	08/29/08	09/01	GRB-107
08187-04	93		J178L3	4.32	0.119			1		100			17	08/29/08	09/01	GRB-109
08187-05	93		J177N2-A	6.01	0.101			0		100			18	08/29/08	09/01	GRB-110
08187-06	93		J177N2-B	4.69	0.112			3		100			18	08/29/08	09/01	GRB-111
08187-07	93		J177N3	7.55	0.0950			1		100			18	08/29/08	09/01	GRB-114
08187-08	93		Lab Control Sample	5.93	0.100			60		100				08/29/08	09/01	GRB-115
08187-09	93		Method Blank	6.00	0.100			62		100				08/29/08	09/01	GRB-105
08187-10	93		Duplicate (R808187-02)	7.91	0.108			2		100			17	08/29/08	09/01	GRB-107
minal values and limits from method				15.0	0.100			5-250		100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test 93B Matrix LIQUID	Client Hanford
SDG 7872	Contract No. S00W235A00
Contact Melissa C. Mannion	Contract SDG K1299

LAB METHOD SUMMARY, cont.

GROSS BETA IN LIQUID

GAS PROPORTIONAL COUNTING

PROCEDURES	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 6.15	± 2.73
FOR 10 SAMPLES	RESIDUE 14	± 50

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test GAM Matrix LIQUID
SDG 7872
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1299

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6160-092								
308187-01			7872-001	J178L0	U		U	
308187-02			7872-002	J178L1	U		U	
308187-03			7872-003	J178L2	U		U	
308187-04			7872-004	J178L3	U		U	
308187-05			7872-005	J177N2-A	U		U	
308187-06			7872-006	J177N2-B	U		U	
308187-07			7872-007	J177N3	U		U	
308187-08			7872-008	Lab Control Sample	ok		ok	
308187-09			7872-009	Method Blank	U		U	
308187-10			7872-010	Duplicate (R808187-02)	-	U	-	U
›minal values and limits from method				RDLs (pCi/mL)	0.050		0.050	

.8-7 Burial Ground - Other Liquids

ETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6160-092			2σ prep error 7.0 % Reference Lab Notebook #6160, pg. 092													
08187-01			J178L0	0.036	100					992			14	08/28/08	08/29	JR,02,00
08187-02			J178L1	0.039	100					992			14	08/28/08	08/29	JR,04,00
08187-03			J178L2	0.036	101					992			14	08/28/08	08/29	JR,05,00
08187-04			J178L3	0.079	100					992			14	08/28/08	08/29	JR,06,00
08187-05			J177N2-A	0.033	100					992			15	08/28/08	08/29	JR,07,00
08187-06			J177N2-B	0.092	100					403			18	08/28/08	09/01	JR,01,00
08187-07			J177N3	0.049	100					403			18	08/28/08	09/01	JR,02,00
08187-08			Lab Control Sample	0.105	100					401				08/28/08	09/01	JR,04,00
08187-09			Method Blank	0.067	100					403				08/28/08	09/01	JR,05,00
08187-10			Duplicate (R808187-02)	0.052	100					1007			17	08/28/08	09/01	JR,04,00
minal values and limits from method				0.050	100					100			180			

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/04/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1299

Test GAM Matrix LIQUID	Client Hanford
SDG 7872	Contract No. S00W235A00
Contact Melissa C. Mannion	Contract SDG K1299

LAB METHOD SUMMARY, cont.

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

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

AVERAGES ± 2 SD	MDA	0.059 ± 0.051
FOR 10 SAMPLES	YIELD	____ ± ____

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/04/08

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/04/08

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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Protocol Hanford1
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Report date 09/04/08

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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Protocol Hanford1
Version Ver 1.0
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SDG 7872
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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Protocol Hanford1
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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

Client Hanford
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Case no SDG_K1299

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 Hanford1
Version Ver 1.0
Form DVD-RG
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Report date 09/04/08

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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1299

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/04/08

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

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

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

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

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

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

SDG 7872
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
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GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1299

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/04/08

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-058	Page 1 of 1

Collector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Project Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums) K1299 (7872)		SAF No. RC-088
Ice Chest No.	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

Price Code: 9B

Data Turnaround: ~~15 Days~~ RBK 7 8/26/08

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	1	1	1	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										
J177N2 - A	OTHER LIQUID	8·14·08	0900	liquid fraction				X					
J177N3	OTHER LIQUID	8·14·08	0925					X					
~~J177N4~~	~~OTHER LIQUID~~												
~~J177N5~~	~~OTHER LIQUID~~												
J177N2-B	other liquid	8/14/08	09:00	oil fraction				X					

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	8-14-08 1600	R. Fuller R. Fahlberg	8·15·08 1000
R. Fuller R. Fahlberg	8·25·08 1000	Fed Ex	
BAR HARBOR		T Ray	08/27/08 11:50

Sign/Print Names

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Matrix *

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

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

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-061	Page 1 of 1

Collector B. Lawrence	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9B	Data Turnaround ~~15~~ Days 7 RK 8/14/08		
Project Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums) K1299 (7872)	SAF No. RC-088	
Ice Chest No.	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

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.						

Sample No.	Matrix *	Sample Date	Sample Time										
J178L0	OTHER	8-15-08	0840					X					
J178L1	OTHER	8-15-08	0850					X					
J178L2	OTHER	8-15-08	0915 RS 8-15-08					X					
J178L3	OTHER	8-15-08	0925					X					

JBL 8-15-08

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: B. Lawrence	1030 8/15/08	R. Fahlberg R. Fahlberg	1030 8.15.08
Relinquished By/Removed From: R. Fahlberg R. Fahlberg	1000 8.25.08	Received By/~~Stored In~~: FedEx	
Relinquished By/Removed From: ~~FED EX~~ OAK HARBOR		Received By/Stored In: [illegible]	08/27/08 11:50
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

RICHMOND, CA LABORATORY

ESBERLINE

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 08/27/08 1400 CoC No. RC-088-058, 061

Container I.D. No. HAZMAT BOX 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: 6 Sample Matrix LIQUID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [Y] 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 [Y] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
    J177N2 ACTIVITY @ 450 cpm IS ON THE OIL LAYER
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 08/27/08 Time: 11:15

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J177N2	450						
OTHERS	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10JUL08

LIONVILLE LABORATORY INC.

RECEIVED
SEP 2008

16 September 2008

Joan Kessner
WC-Hanford, Inc.
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 #	0809L002
SDG #	K1299
SAF #	RC-088
Date Received	9/2/08
# Samples	6
Matrix	OTHER LIQUID
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

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

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177N2	001	OI	08LE0415	08/14/08	09/03/08	09/09/08
J177N3	002	OI	08LE0415	08/14/08	09/03/08	09/08/08
J177N3	002 MS	OI	08LE0415	08/14/08	09/03/08	09/08/08
J177N3	002 MSD	OI	08LE0415	08/14/08	09/03/08	09/09/08
J178L0	003	OI	08LE0415	08/15/08	09/03/08	09/05/08
J178L1	004	OI	08LE0415	08/15/08	09/03/08	09/05/08
J178L2	005	OI	08LE0415	08/15/08	09/03/08	09/09/08
J178L3	006	OI	08LE0415	08/15/08	09/03/08	09/10/08
LAB QC:						
SBLKXL	MB1	OI	08LE0415	N/A	09/03/08	09/08/08
SBLKXL	MB1 BS	OI	08LE0415	N/A	09/03/08	09/08/08

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0809L002
SDG/SAF # K1299 / RC-088

W.O. #: 60049-001-001-0001-00
Date Received: 09-02-2008

SEMIVOLATILE

Six (6) oil samples were collected on 08-14,15-2008.

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 09-03-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 09-05,08,09,10-2008.

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

2. Samples were received and therefore extracted out of hold time. However, samples were analyzed within holding time.

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

4. All surrogate recoveries were within acceptance criteria.

5. Two (2) of one hundred twenty eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS199) has been enclosed.

6. Two (2) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS199) has been enclosed.

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

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

LIONVILLE LABORATORY INC.

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 22 pages.

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

10. Internal standard area and retention time criteria were met for all samples except J178L1. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the sample was not reanalyzed.

11. 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").

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

9/15/08
Date

LVLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS199

Initiator: Sharon Saylor
Date: 9-10-08
Client: WC Hanford RC000 K1299

Batch: 0F09L002
Samples: MS, MSD, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: O.L
Prep Batch: 0F16041S

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① low recovery of 2,4-dinitrophenol in the ms, msd + BS

② low recovery of 4,6-dinitro-2-methylphenol in the BS but ms + msd are ok

2. Known or Probable Causes(s) Acidic phenols can be subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material

3. Discussion and Proposed Action Other Description: narrate

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

4. Project Manager Instructions...signature/date: 9/10/08

✓ 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: 9/15/08 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 / _____
1 MS BNA: Carden / _____
__ Other: _____

GLOSSARY

DATA QUALIFIERS

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

	Cust ID:	J177N2		J177N3		J177N3		J177N3		J178L0		J178L1	
Sample Information	RFW#:	001		002		002 MS		002 MSD		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	85	%	102	%	93	%	87	%	68	%	88	%
	2-Fluorobiphenyl	97	%	99	%	98	%	88	%	77	%	102	%
	Terphenyl-d14	88	%	111	%	105	%	95	%	77	%	71	%
	Phenol-d5	87	%	91	%	94	%	91	%	74	%	89	%
	2-Fluorophenol	85	%	91	%	85	%	77	%	73	%	103	%
	2,4,6-Tribromophenol	95	%	75	%	93	%	89	%	55	%	75	%
			fl		fl		fl		fl		fl		fl
Phenol		210000	U	210000	U	76	%	86	%	210000	U	210000	U
bis(2-Chloroethyl)ether		210000	U	210000	U	88	%	89	%	210000	U	210000	U
2-Chlorophenol		210000	U	210000	U	75	%	83	%	210000	U	210000	U
1,3-Dichlorobenzene		210000	U	210000	U	84	%	90	%	210000	U	210000	U
1,4-Dichlorobenzene		210000	U	210000	U	84	%	87	%	210000	U	210000	U
1,2-Dichlorobenzene		210000	U	210000	U	87	%	91	%	210000	U	210000	U
2-Methylphenol		210000	U	210000	U	81	%	86	%	210000	U	210000	U
2,2'-oxybis(1-Chloropropane)		210000	U	210000	U	88	%	91	%	210000	U	210000	U
3/4 Methylphenol		210000	U	210000	U	80	%	70	%	210000	U	210000	U
N-Nitroso-di-n-propylamine		210000	U	210000	U	87	%	88	%	210000	U	210000	U
Hexachloroethane		210000	U	210000	U	86	%	91	%	210000	U	210000	U
Nitrobenzene		210000	U	210000	U	84	%	86	%	210000	U	210000	U
Isophorone		210000	U	210000	U	82	%	84	%	210000	U	210000	U
2-Nitrophenol		210000	U	210000	U	79	%	77	%	210000	U	210000	U
2,4-Dimethylphenol		210000	U	210000	U	80	%	84	%	210000	U	210000	U
bis(2-Chloroethoxy)methane		210000	U	210000	U	87	%	88	%	210000	U	210000	U
2,4-Dichlorophenol		210000	U	210000	U	83	%	91	%	210000	U	210000	U
1,2,4-Trichlorobenzene		210000	U	210000	U	85	%	90	%	210000	U	210000	U
Naphthalene		210000	U	210000	U	81	%	83	%	210000	U	210000	U
4-Chloroaniline		210000	U	210000	U	81	%	79	%	210000	U	210000	U
Hexachlorobutadiene		210000	U	210000	U	89	%	95	%	210000	U	210000	U
4-Chloro-3-methylphenol		210000	U	210000	U	84	%	87	%	210000	U	210000	U
2-Methylnaphthalene		15000	J	210000	U	81	%	83	%	210000	U	37000	J
Hexachlorocyclopentadiene		210000	U	210000	U	69	%	67	%	210000	U	210000	U
2,4,6-Trichlorophenol		210000	U	210000	U	94	%	87	%	210000	U	210000	U
2,4,5-Trichlorophenol		520000	U	520000	U	83	%	85	%	520000	U	520000	U

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J177N2		J177N3		J177N3		J177N3		J178L0		J178L1	
RFW#:	001		002		002 MS		002 MSD		003		004	
2-Chloronaphthalene	210000	U	210000	U	90	%	85	%	210000	U	210000	U
2-Nitroaniline	520000	U	520000	U	92	%	92	%	520000	U	520000	U
Dimethylphthalate	210000	U	210000	U	85	%	85	%	210000	U	210000	U
Acenaphthylene	210000	U	210000	U	87	%	83	%	210000	U	210000	U
2,6-Dinitrotoluene	210000	U	210000	U	87	%	89	%	210000	U	210000	U
3-Nitroaniline	520000	U	520000	U	81	%	85	%	520000	U	520000	U
Acenaphthene	210000	U	210000	U	82	%	82	%	210000	U	210000	U
2,4-Dinitrophenol	520000	U	520000	U	16 *	%	19 *	%	520000	U	520000	U
4-Nitrophenol	520000	U	520000	U	75	%	89	%	520000	U	520000	U
Dibenzofuran	210000	U	210000	U	89	%	85	%	210000	U	19000	J
2,4-Dinitrotoluene	210000	U	210000	U	91	%	91	%	210000	U	210000	U
Diethylphthalate	210000	U	210000	U	83	%	82	%	210000	U	210000	U
4-Chlorophenyl-phenylether	210000	U	210000	U	86	%	84	%	210000	U	210000	U
Fluorene	23000	J	210000	U	85	%	84	%	21000	J	60000	J
4-Nitroaniline	520000	U	520000	U	77	%	79	%	520000	U	520000	U
4,6-Dinitro-2-methylphenol	520000	U	520000	U	40	%	52	%	520000	U	520000	U
N-Nitrosodiphenylamine (1)	210000	U	210000	U	72	%	71	%	210000	U	210000	U
4-Bromophenyl-phenylether	210000	U	210000	U	75	%	70	%	210000	U	210000	U
Hexachlorobenzene	210000	U	210000	U	86	%	83	%	210000	U	210000	U
Pentachlorophenol	520000	U	520000	U	85	%	78	%	520000	U	520000	U
Phenanthrene	93000	J	210000	U	85	%	84	%	42000	J	180000	J
Anthracene	210000	U	210000	U	84	%	83	%	210000	U	14000	J
Carbazole	210000	U	210000	U	83	%	81	%	210000	U	210000	U
Di-n-butylphthalate	16000	J	210000	U	82	%	79	%	210000	U	210000	U
Fluoranthene	13000	J	210000	U	84	%	79	%	210000	U	35000	J
Pyrene	12000	J	210000	U	88	%	86	%	210000	U	17000	J
Butylbenzylphthalate	210000	U	210000	U	82	%	83	%	210000	U	210000	U
3,3'-Dichlorobenzidine	210000	U	210000	U	80	%	86	%	210000	U	210000	U
Benzo(a)anthracene	210000	U	210000	U	81	%	84	%	210000	U	210000	U
Chrysene	210000	U	210000	U	85	%	83	%	210000	U	210000	U
bis(2-Ethylhexyl)phthalate	210000	U	210000	U	81	%	81	%	210000	U	330000	
Di-n-octyl phthalate	210000	U	210000	U	74	%	74	%	210000	U	210000	U
Benzo(b)fluoranthene	210000	U	210000	U	80	%	79	%	210000	U	210000	U
Benzo(k)fluoranthene	210000	U	210000	U	83	%	78	%	210000	U	210000	U
Benzo(a)pyrene	210000	U	210000	U	77	%	76	%	210000	U	210000	U
Indeno(1,2,3-cd)pyrene	210000	U	210000	U	70	%	65	%	210000	U	210000	U
Dibenz(a,h)anthracene	210000	U	210000	U	76	%	72	%	210000	U	210000	U
Benzo(g,h,i)perylene	210000	U	210000	U	68	%	65	%	210000	U	210000	U

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

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000000010

	Cust ID:	J178L2		J178L3		SBLKXL		SBLKXL BS	
Sample Information	RFW#:	005		006		08LE0415-MB1		08LE0415-MB1	
	Matrix:	OIL		OIL		OIL		OIL	
	D.F.:	21.0		21.0		21.0		21.0	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	86	%	75	%	98	%	93	%
	2-Fluorobiphenyl	91	%	82	%	98	%	93	%
	Terphenyl-d14	86	%	67	%	93	%	101	%
	Phenol-d5	82	%	51	%	98	%	93	%
	2-Fluorophenol	82	%	62	%	99	%	80	%
	2,4,6-Tribromophenol	80	%	35	%	74	%	79	%
Phenol		210000	U	210000	U	210000	U	79	%
bis(2-Chloroethyl)ether		210000	U	210000	U	210000	U	91	%
2-Chlorophenol		210000	U	210000	U	210000	U	80	%
1,3-Dichlorobenzene		210000	U	210000	U	210000	U	95	%
1,4-Dichlorobenzene		210000	U	210000	U	210000	U	91	%
1,2-Dichlorobenzene		210000	U	210000	U	210000	U	95	%
2-Methylphenol		210000	U	210000	U	210000	U	87	%
2,2'-oxybis(1-Chloropropane)		210000	U	210000	U	210000	U	94	%
3/4 Methylphenol		210000	U	210000	U	210000	U	84	%
N-Nitroso-di-n-propylamine		210000	U	210000	U	210000	U	100	%
Hexachloroethane		210000	U	210000	U	210000	U	93	%
Nitrobenzene		210000	U	210000	U	210000	U	87	%
Isophorone		210000	U	210000	U	210000	U	86	%
2-Nitrophenol		210000	U	210000	U	210000	U	82	%
2,4-Dimethylphenol		210000	U	210000	U	210000	U	88	%
bis(2-Chloroethoxy)methane		210000	U	210000	U	210000	U	89	%
2,4-Dichlorophenol		210000	U	210000	U	210000	U	77	%
1,2,4-Trichlorobenzene		210000	U	210000	U	210000	U	84	%
Naphthalene		210000	U	210000	U	210000	U	82	%
4-Chloroaniline		210000	U	210000	U	210000	U	81	%
Hexachlorobutadiene		210000	U	210000	U	210000	U	95	%
4-Chloro-3-methylphenol		210000	U	210000	U	210000	U	96	%
2-Methylnaphthalene		17000	J	32000	J	210000	U	84	%
Hexachlorocyclopentadiene		210000	U	210000	U	210000	U	66	%
2,4,6-Trichlorophenol		210000	U	210000	U	210000	U	92	%
2,4,5-Trichlorophenol		520000	U	520000	U	520000	U	89	%

*= Outside of EPA CLP QC limits.

Cust ID:	J178L2		J178L3		SBLKXL		SBLKXL BS	
RFW#:	005		006		08LE0415-MB1		08LE0415-MB1	
2-Chloronaphthalene	210000	U	210000	U	210000	U	90	%
2-Nitroaniline	520000	U	520000	U	520000	U	97	%
Dimethylphthalate	210000	U	210000	U	210000	U	88	%
Acenaphthylene	210000	U	210000	U	210000	U	88	%
2,6-Dinitrotoluene	210000	U	210000	U	210000	U	85	%
3-Nitroaniline	520000	U	520000	U	520000	U	93	%
Acenaphthene	210000	U	210000	U	210000	U	86	%
2,4-Dinitrophenol	520000	U	520000	U	520000	U	9 *	%
4-Nitrophenol	520000	U	520000	U	520000	U	101	%
Dibenzofuran	18000	J	27000	J	210000	U	89	%
2,4-Dinitrotoluene	210000	U	210000	U	210000	U	94	%
Diethylphthalate	210000	U	210000	U	210000	U	85	%
4-Chlorophenyl-phenylether	210000	U	210000	U	210000	U	88	%
Fluorene	24000	J	83000	J	210000	U	85	%
4-Nitroaniline	520000	U	520000	U	520000	U	81	%
4,6-Dinitro-2-methylphenol	520000	U	520000	U	520000	U	36 *	%
N-Nitrosodiphenylamine (1)	210000	U	210000	U	210000	U	68	%
4-Bromophenyl-phenylether	210000	U	210000	U	210000	U	70	%
Hexachlorobenzene	210000	U	210000	U	210000	U	89	%
Pentachlorophenol	520000	U	520000	U	520000	U	81	%
Phenanthrene	110000	J	250000		210000	U	85	%
Anthracene	210000	U	45000	J	210000	U	85	%
Carbazole	210000	U	210000	U	210000	U	83	%
Di-n-butylphthalate	210000	U	25000	J	210000	U	81	%
Fluoranthene	210000	U	25000	J	210000	U	79	%
Pyrene	210000	U	48000	J	210000	U	90	%
Butylbenzylphthalate	210000	U	210000	U	210000	U	88	%
3,3'-Dichlorobenzidine	210000	U	210000	U	210000	U	94	%
Benzo(a)anthracene	210000	U	210000	U	210000	U	82	%
Chrysene	210000	U	210000	U	210000	U	88	%
bis(2-Ethylhexyl)phthalate	210000	U	210000	U	210000	U	87	%
Di-n-octyl phthalate	210000	U	12000	J	210000	U	101	%
Benzo(b)fluoranthene	210000	U	210000	U	210000	U	100	%
Benzo(k)fluoranthene	210000	U	210000	U	210000	U	90	%
Benzo(a)pyrene	210000	U	210000	U	210000	U	93	%
Indeno(1,2,3-cd)pyrene	210000	U	210000	U	210000	U	87	%
Dibenz(a,h)anthracene	210000	U	210000	U	210000	U	88	%
Benzo(g,h,i)perylene	210000	U	210000	U	210000	U	83	%

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J177N2

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-001

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

Lab File ID: C090815

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

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.	TRIMETHYLNAPHTHALENE	19.074	700000	J
2.	TRIMETHYLNAPHTHALENE	19.617	800000	J
3.	ALKANE	20.151	800000	J
4.	ALKANE	20.211	1000000	J
5.	UNKNOWN	20.392	700000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J177N3

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-002

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

Lab File ID: C090812

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/08/08

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	8.522	800000	J
2.	UNKNOWN	32.821	80000	J
3.	UNKNOWN	36.731	80000	J
4.	UNKNOWN	37.308	100000	J
5.	UNKNOWN	40.651	100000	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J178L0

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-003

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

Lab File ID: C090512

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/05/08

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	8.715	3000000	J
2.	TRIMETHYLNAPHTHALENE	19.275	500000	J
3.	UNKNOWN	19.456	400000	J
4.	TRIMETHYLNAPHTHALENE	19.801	400000	J
5.	ALKANE	20.361	400000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J178L1

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-004

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

Lab File ID: C090513

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/05/08

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	8.710	2000000	J
2.	ALKANE	20.312	1000000	J
3.	ALKANE	20.364	2000000	J
4.	UNKNOWN	20.562	2000000	J
5.	UNKNOWN	20.665	1000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J178L2

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-005

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

Lab File ID: C090816

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/09/08

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	8.523	1000000	J
2.	UNKNOWN	19.255	700000	J
3.	ALKANE	20.151	800000	J
4.	ALKANE	20.203	1000000	J
5.	UNKNOWN	35.888	800000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J178L3

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 0809L002-006

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

Lab File ID: C090915

Level: (low/med) LOW

Date Received: 09/02/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/10/08

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.	ALKANE	19.999	2000000	J
2.	ALKANE	20.059	2000000	J
3.	UNKNOWN	20.343	900000	J
4.	UNKNOWN	20.877	1000000	J
5.	ALKANE	22.273	1000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKXL

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-088 K1299

Matrix: (soil/water) OIL

Lab Sample ID: 08LE0415-MB1

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

Lab File ID: C090811

Level: (low/med) LOW

Date Received: 09/03/08

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

Date Extracted: 09/03/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/08/08

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	25.888	80000	J
2.	UNKNOWN	36.121	70000	J
3.	UNKNOWN	36.173	60000	J
4.	UNKNOWN	37.671	60000	J
5.	UNKNOWN	40.850	50000	J

ville Laboratory Use Only

809L002

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A

t Washington Closure Hanford RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

ille Laboratory Project Manager Orlette Johnson

SW846 Del STO TAT 7 Days

Rec'd 9.2.08 Date Due 9-9-08

Refrigerator #			2													
#/Type Container	Liquid		1gl													
	Solid															
Volume	L.g.		250													
Preservatives			—													
ANALYSES REQUESTED →			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	Ign.				
			Lionville Laboratory Use Only													
				0625H	OPCB					Met①		IGN				

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J177N2			X	8.14.08	0900		X	X				X		X				
002	J177N3				↓	0925		X	X				X		X				
003	J178L0				8.15.08	0840		X	X				X		X				
004	J178L1					0850		X	X				X		X				
005	J178L2					0910		X	X				X		X				
006	J178L3				↓	0925		X	X				X		X				

ial Instructions: Run matrix QC

met①: HSL + Sn, Zr

Special Instructions:

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

Inquished by	Received by	Date	Time
[illegible]	[illegible]	9.2.08	12:35

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

000000019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-058 | Page 1 of 1

lector I. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9B	Data Turnaround ~~15~~ Days 7 BUS 8/21/08		
iect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No.	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment
nped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

OSSIBLE SAMPLE HAZARDS/REMARKS

ntential 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	~~1~~ 0	~~1~~ 0	~~1~~ 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											
7N2 / OTHER LIQUID / 8-14-08 / 0900	X	X	X	X				5898			
7N3 / OTHER LIQUID / 8-14-08 / 0925	X	X	X	X				5480			
~~7N4 / OTHER LIQUID~~											
~~7N5 / OTHER LIQUID~~											

CHAIN OF POSSESSION	Sign/Print Names		
quished By/Removed From	Date/Time 1000 8-14-08	Received By/Stored In R. Fellows R. Fahlberg	Date/Time 1000 8-14-08
quished By/Removed From R. Fahlberg	Date/Time 1000 8-22-08	Received By/Stored In Fed Ex	Date/Time
quished By/Removed From	Date/Time 9-2-08/12:35	Received By/Stored In	Date/Time 9-2-08/12:35
quished By/Removed From 9-2-08	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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
IAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

000000020

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-088-061	Page 1 of 1
lector . Lawrence	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code: 9B Data Turnaround: ~~15~~ Days 7 RT 8/14/08
ject Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088	
Chest No.	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment	
pped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.	

000000021

OSSIBLE SAMPLE HAZARDS/REMARKS

ntential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None	Cool 4C					
Type of Container	aG	aG	P	P	P	aG					
No. of Container(s)	1	0	0	0	1	~~60~~ 1 8/15/08					
Volume	250mL	125mL	125mL	60mL	500mL	60mL					
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										
78L0	OTHER	8-15-08	0840	X	X	X	X		X				
78L1	OTHER		0850	X	X	X	X		X				
78L2	OTHER		0910	X	X	X	X		X				
78L3	OTHER		0925	X	X	X	X		X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
nquished By/Removed From: Lawrence	8-15-08 1530	R. Fahlberg R. Fahlberg	8-15-08 1530
nquished By/Removed From: R. Fahlberg R. Fahlberg	8-26-08 1000	Fed Ex	
nquished By/Removed From: Goodway	9-2-08/12:35	J. Mulch	9-2-08/12:
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.2.08

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

LvLI Batch #: 0809L002 Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Roadway		Airbill # 868-043433-7
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 23.4 23.0 °C		DOT Boxes Box ~~Cooler~~ # 1 Box #2
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
SEP 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299 .

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177N2	001	OI	08LE0416	08/14/08	09/03/08	09/05/08
J177N3	002	OI	08LE0416	08/14/08	09/03/08	09/05/08
J177N3	002 MS	OI	08LE0416	08/14/08	09/03/08	09/05/08
J177N3	002 MSD	OI	08LE0416	08/14/08	09/03/08	09/05/08
J178L0	003	OI	08LE0416	08/15/08	09/03/08	09/05/08
J178L1	004	OI	08LE0416	08/15/08	09/03/08	09/05/08
J178L2	005	OI	08LE0416	08/15/08	09/03/08	09/05/08
J178L3	006	OI	08LE0416	08/15/08	09/03/08	09/05/08

LAB QC:

PBLKUI	MB1	S	08LE0416	N/A	09/03/08	09/04/08
PBLKUI	MB1 BS	S	08LE0416	N/A	09/03/08	09/04/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0809L002
SDG/SAF # K1299 / RC-088

W.O. #: 60049-001-001-0001-00
Date Received: 09-02-2008

PCB

Six (6) oil samples were collected on 08-14,15-2008.

The samples and their associated QC samples were extracted on 09-03-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 09-04,05-2008. The extraction procedure was based on method 3580A (waste dilution 1g into 10 mLs of Hexane) and the extracts were analyzed based on method 8082.

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

1. The samples were extracted six days outside of recommended hold 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. Nine (9) of twenty (20) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC108) has been enclosed.

5. All blank spike recoveries were within acceptance criteria.

6. Four (4) of four (4) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08GC108) has been enclosed.

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

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

r:\group\qa\cindy\to print\0809-002coil2.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 11 pages.

LIONVILLE LABORATORY INC.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

Date 9/9/18

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC108

Initiator: CAC
Date: 09/05/08
Client: WC Hanford

Batch: 0809L002
Samples: 001, 002MS/MSD, 004, 005
Method: SW846/MCAWW/CLP/ 00Le

Parameter: PCB
Matrix: OIL
Prep Batch: 08LE041Le

1. Reason for SDR

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

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

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

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

low recoveries of surrogates + spikes

2. Known or Probable Causes(s) Probable Oil coating columns & detectors

Matrix effect

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

Other Description:

report + narrate

4. Project Manager Instructions...signature/date: [signature] 9/5/08
✓ 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: CJ Kelly 9/8/08

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
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

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

QA-139-A-0208

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 Use Only

8091002

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A

0000000006

nt Washington Closure Hanford RC-088

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

ville Laboratory Project Manager Arlette Johnson

SW846 Del STD TAT 7 Days

Rec'd 9.2.08 Date Due 9-9-08

Refrigerator #			2														
#/Type Container	Liquid		1gl									1					
	Solid																
Volume	L.G.		250														
Preservatives			—														
ANALYSES REQUESTED			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	Ign. +					
										Lionville Laboratory Use Only							
				8625H	OPC.B					Met①		IIGN					
001 J177N2			X	8.14.08	0900			X	X			X	X				
002 J177N3				↓	0925			X	X			X	X				
003 J178L0				8.15.08	0840			X	X			X	X				
004 J178L1				↓	0850			X	X			X	X				
005 J178L2					0910			X	X			X	X				
006 J178L3				↓	0925			X	X			X	X				

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

Matrix QC Chosen (✓): MS, MSD

Special Instructions: Run matrix QC

met①: HSL+Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9.2.08	12:35

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-058 | Page 1 of 1

lector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9B	Data Turnaround: ~~15~~ Days 7 NK 8/21/08		
ject Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Chest No.	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment
pped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

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	1 0	1 0	1 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											
7N2 / OTHER LIQUID / 8·14·08 / 0900	X	X	X	X					5898		
7N3 / OTHER LIQUID / 8·14·08 / 0925	X	X	X	X					5480		
~~7N4 / OTHER LIQUID~~											
~~7N5 / OTHER LIQUID~~											

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Aurena	8-14-08 1000	R. Felly, R. Fahlberg	8·14·08 1000
Felly, R. Fahlberg	8·15·08 1000	Fed Ex	
Jackway	8·9·08/12:35	D. Smith	8·2·08/12:35
[illegible]	8·2·08		

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

ORATORY ECTION	Received By	Title	Date/Time
AL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

I-EE-011

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-088-061	Page 1 of 1
lector 3. Lawrence	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9B	Data Turnaround ~~15~~ Days 7 RT 8/14/08
lect Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088		
Chest No.	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment		
inped To EBERLINE SERVICES LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.		

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ntamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None	Cool 4C					
Type of Container	aG	aG	P	P	P	aG					
No. of Container(s)	1	0	0	0	1	60, 1 8.15.08					
Volume	250mL	125mL	125mL	60mL	500mL	60 mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (1) in Special Instructions.						

Sample No.	Matrix *	Sample Date	Sample Time										
78L0	OTHER	8-15-08	0840	X	X	X	X		X				
78L1	OTHER		0850	X	X	X	X		X				
78L2	OTHER		0910	X	X	X	X		X				
78L3	OTHER		0925	X	X	X	X		X				

CHAIN OF POSSESSION		Sign/Print Names	
nquished By/Removed From	Date/Time 1630 8-15-08	Received By/Stored In R. Fahlberg R. Fahlberg	Date/Time 1630 8-15-08
uquished By/Removed From . Fahlberg R. Fahlberg	Date/Time 1000 8-25-08	Received By/Stored In Fed Ex	Date/Time
nquished By/Removed From Goodway	Date/Time 9-2-08/12:35	Received By/Stored In	Date/Time 9-2-08/12:35
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

:H-EE-011

000000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.2.08

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

LvLI Batch #: 0809L002 Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Roadway		Airbill # 868-043433-7
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 23.4 23.0 °C		DOT Boxes Box ~~Cooler~~ # 1 Box #2
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.

PCBs by GC

Report Date: 09/05/08 11:29

RFW Batch Number: 0809L002 Client: WC-HANFORD RC-088 K1299 Work Order: 60049001001 Page: 1

000000010

	Cust ID:	J177N2	J177N3	J177N3	J177N3	J178L0	J178L1
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	OIL	OIL	OIL	OIL	OIL	OIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	28 * %	55 %	55 %	50 * %	62 %	42 * %
	Decachlorobiphenyl	27 * %	66 %	58 %	65 %	76 %	19 * %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		400 U	400 U	31 * %	17 * %	400 U	400 U
Aroclor-1221		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1232		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1242		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1248		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1254		1900	400 U	400 U	400 U	400 U	400 U
Aroclor-1260		920	400 U	29 * %	11 * %	400 U	400 U

	Cust ID:	J178L2	J178L3	PBLKUI	PBLKUI BS
Sample Information	RFW#:	005	006	08LE0416-MB1	08LE0416-MB1
	Matrix:	OIL	OIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	51 * %	43 * %	102 %	104 %
	Decachlorobiphenyl	32 * %	21 * %	77 %	82 %
		fl	fl	fl	fl
Aroclor-1016		400 U	400 U	400 U	89 %
Aroclor-1221		400 U	400 U	400 U	400 U
Aroclor-1232		400 U	400 U	400 U	400 U
Aroclor-1242		400 U	400 U	400 U	400 U
Aroclor-1248		400 U	400 U	400 U	400 U
Aroclor-1254		400 U	400 U	400 U	400 U
Aroclor-1260		400 U	400 U	400 U	86 %

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: 09/03/08 Extraction Batch No: 08LE0416 Analyst: MF Method: **** WD3580

Test: OPCB Cleanup Date: 09/03/08 Analyst: MF Client: WC-HANFORD RC-088 K1299

LIMS Report Date: 09/04/08 Solvent: HEXANE Adsorbent: SL/ACD

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
0809L002-	WC-HANFORD RC-088 K1299										
001	J177N2		1.0	1.0		10		1.0	N	0.0	10000
002	J177N3		1.0	1.0		10		1.0	N	0.0	10000
002 -S	J177N3		1.0	1.0	1.0	10		1.0	N	0.0	10000
002 -T	J177N3		1.0	1.0	1.0	10		1.0	N	0.0	10000
003	J178L0		1.0	1.0		10		1.0	N	0.0	10000
004	J178L1		1.0	1.0		10		1.0	N	0.0	10000
005	J178L2		1.0	1.0		10		1.0	N	0.0	10000
006	J178L3		1.0	1.0		10		1.0	N	0.0	10000
08LE0416-MB1	PBLKUI		1.0	1.0		10		1.0	N	100.00	10000
08LE0416-MB1 -S	PBLKUI		1.0	1.0	1.0	10		1.0	N	100.00	10000

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	9/4/08 1300	SZ	9/4/08 13:00	GC

000000011

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

RECEIVED
SEP 2008

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177N2						
IGNITABILITY	001	OI	08LFP026	08/14/08	09/03/08	09/03/08
J177N3						
IGNITABILITY	002	OI	08LFP026	08/14/08	09/03/08	09/03/08
J178L0						
IGNITABILITY	003	OI	08LFP026	08/15/08	09/03/08	09/03/08
J178L1						
IGNITABILITY	004	OI	08LFP026	08/15/08	09/03/08	09/03/08
J178L2						
IGNITABILITY	005	OI	08LFP026	08/15/08	09/03/08	09/03/08
J178L3						
IGNITABILITY	006	OI	08LFP026	08/15/08	09/03/08	09/03/08
LAB QC:						
IGNITABILITY	MB1 BS	W	08LFP026	N/A	09/03/08	09/03/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088 K1299
LVL#: 0809L002

W.O.#: 60049-001-001-0001-00
Date Received: 09-02-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 6 liquid 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 did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.

5. The Laboratory Control Sample (LCS) was within 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

9/8/08
Date

njp\i09-002

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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS* SAMPLE ANALYSIS

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

* Liquid samples

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: WC-HANFORD RC-088 K1299
LVL#: 0809L002

W.O.#: 60049-001-001-0001-00
Date Received: 09-02-08

Analyte:	**Observation:**
Ignitability	Samples J178L0, J178L1, J178L2 and J178L3 did not ignite. The samples were heated to approximately 210°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 81°F.

njp\i09-002.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/04/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J177N2	Ignitability	186	DEG F	60.0	
-002	J177N3	Ignitability	181	DEG F	60.0	

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/04/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
BLANK10	08LFP026-MB1	Ignitability	81.0	0.0	81.0	100	1.0

Lionville Laboratory Use Only

809L002

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

A

: Washington Closure Hanford RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

ille Laboratory Project Manager Orlotte Johnson

SW846 Del STO TAT 7 Days

Rec'd 9-2-08 Date Due 9-9-08

Refrigerator #			2														
#/Type Container	Liquid		1gl									1					
	Solid																
Volume	L.g.		250									1					
Preservatives			—														
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Metal + Hg	CN	Tgit					
				Lionville Laboratory Use Only													
				8625H	OPC.B					Metal		IIGN					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J177N2			X	8.14.08	0900		X	X					X		X			
002	J177N3				↓	0925		X	X					X		X			
003	J178L0				8.15.08	0840		X	X					X		X			
004	J178L1					0850		X	X					X		X			
005	J178L2					0910		X	X					X		X			
006	J178L3			↓	↓	0925		X	X					X		X			

: oil, sediment, solid, sludge, water, oil, air, drum solids, drum liquids, P/TCLP, leachate, tape, other, sh

ial Instructions: Run matrix QC

met ①: HSL + Sn, Zr

Special Instructions:

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

Inquished by	Received by	Date	Time
[illegible]	[illegible]	9.2.08	12:35

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

00000000

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-058

lector J. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9B	Data Turnaround ~~15~~ Days 7 BUS 8/21/08		
ject Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No.	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment
pped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

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						
		JPD 7-10-08									
No. of Container(s)	1	1 0	1 0	1 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											
7N2 / OTHER LIQUID / 8·14·08 / 0900	X	X	X	X				5898			
7N3 / OTHER LIQUID / 8·14·08 / 0925	X	X	X	X				5480			
~~7N4 / OTHER LIQUID~~											
~~7N5 / OTHER LIQUID~~											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
quished By/Removed From Aurena	1000 8-14-08	Received By/Stored In R. Fellows R. Fahlberg	1000 8·14·08
quished By/Removed From Fellows R. Fahlberg	1000 8·25·08	Received By/Stored In Fed Ex	Date/Time
quished By/Removed From Sawyer	Date/Time 9·9·08/12:35	Received By/Stored In D. Mitch	Date/Time 9.2.08/12:35
quished By/Removed From 9·2·08	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

H-EE-011

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-061	Page 1 of 1
lector B. Lawrence	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9B Data Turnaround ~~15~~ Days 7 RK 8/14/08
ject Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No.	Field Logbook No. EL-1395-13 COA RG61878500	Method of Shipment	
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No.	Bill of Lading/Air Bill No.	

000000010

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None	Cool 4C					
Type of Container	aG	aG	P	P	P	aG					
No. of Container(s)	1	0	0	0	1	60, 1 8/15/08					
Volume	250mL	125mL	125mL	60mL	500mL	60 mL					
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										
78L0	OTHER	8-15-08	0840	X	X	X	X		X				
78L1	OTHER		0850	X	X	X	X		X				
78L2	OTHER		0910	X	X	X	X		X				
78L3	OTHER		0925	X	X	X	X		X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
inquished By/Removed From Lawrence	1530 8-15-08	Received By/Stored In R. Fahlberg R. Fahlberg	1530 8-15-08
inquished By/Removed From R. Fahlberg R. Fahlberg	Date/Time 1000 8-25-08	Received By/Stored In Fed Ex	Date/Time
inquished By/Removed From Goodway	9-2-08/12:35	Received By/Stored In J. Mulch	Date/Time 9-2-08/12:35
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.2.08

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

LvLI Batch #: 0809L002 Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Roadway		Airbill # 868-043433-7
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 23.4 23.0 °C		DOT Boxes Box ~~Cooler~~ # 1 Box #2
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 MP 9-4-08	☑ No	All #5 (Temp >6°C)
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.

RECEIVED
SEP 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177N2						
SILVER, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
SILVER, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
SILVER, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
ALUMINUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
ARSENIC, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
ARSENIC, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
ARSENIC, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
BARIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
BARIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
BARIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
CALCIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
CALCIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
CALCIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
CADMIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
CADMIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
CADMIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
COBALT, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
COBALT, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
COBALT, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
CHROMIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
COPPER, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
COPPER, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
COPPER, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
IRON, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
IRON, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
IRON, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
MERCURY, TOTAL	001	OI	08C0154	08/14/08	09/04/08	09/05/08
MERCURY, TOTAL	001 REP	OI	08C0154	08/14/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	OI	08C0154	08/14/08	09/04/08	09/05/08
POTASSIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
POTASSIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
POTASSIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
MANGANESE, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
MANGANESE, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
MANGANESE, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
SODIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
SODIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
SODIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
NICKEL, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
NICKEL, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
NICKEL, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
LEAD, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
LEAD, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
LEAD, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
ANTIMONY, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
SELENIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
SELENIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
SELENIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
TIN, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
TIN, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
TIN, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
THALLIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
THALLIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
THALLIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
VANADIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
VANADIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
VANADIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
ZINC, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08
ZINC, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
ZINC, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	001	OI	08L0322	08/14/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	001 REP	OI	08L0322	08/14/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	001 MS	OI	08L0322	08/14/08	09/04/08	09/05/08
J177N3						
SILVER, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
ALUMINUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
ARSENIC, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
BARIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
CALCIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
CADMIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
COBALT, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
CHROMIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
COPPER, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
IRON, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
MERCURY, TOTAL	002	OI	08C0154	08/14/08	09/04/08	09/05/08
POTASSIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
MANGANESE, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
SODIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
NICKEL, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
LEAD, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
ANTIMONY, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
SELENIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
TIN, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
THALLIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
VANADIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
ZINC, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	002	OI	08L0322	08/14/08	09/04/08	09/05/08
J178L0						
SILVER, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
ALUMINUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
ARSENIC, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
BARIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
CADMIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
COBALT, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
CHROMIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
COPPER, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
IRON, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
MERCURY, TOTAL	003	OI	08C0154	08/15/08	09/04/08	09/05/08
POTASSIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
MANGANESE, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
SODIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
NICKEL, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
LEAD, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
ANTIMONY, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
SELENIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
TIN, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
THALLIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
VANADIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
ZINC, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	003	OI	08L0322	08/15/08	09/04/08	09/05/08
J178L1						
SILVER, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
ALUMINUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
ARSENIC, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
BARIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
CALCIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
CADMIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
COBALT, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
CHROMIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
COPPER, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
IRON, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
MERCURY, TOTAL	004	OI	08C0154	08/15/08	09/04/08	09/05/08
POTASSIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
MANGANESE, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
NICKEL, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
LEAD, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
ANTIMONY, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
SELENIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
TIN, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
THALLIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
VANADIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
ZINC, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	004	OI	08L0322	08/15/08	09/04/08	09/05/08
J178L2						
SILVER, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
ALUMINUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
ARSENIC, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
BARIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
CALCIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
CADMIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
COBALT, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
CHROMIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
COPPER, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
IRON, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
MERCURY, TOTAL	005	OI	08C0154	08/15/08	09/04/08	09/05/08
POTASSIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
MANGANESE, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
SODIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
NICKEL, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
LEAD, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
ANTIMONY, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
SELENIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
TIN, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
THALLIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
VANADIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
ZINC, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	005	OI	08L0322	08/15/08	09/04/08	09/05/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J178L3						
SILVER, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
ALUMINUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
ARSENIC, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
BARIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
BERYLLIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
CALCIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
CADMIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
COBALT, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
CHROMIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
COPPER, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
IRON, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
MERCURY, TOTAL	006	OI	08C0154	08/15/08	09/04/08	09/05/08
POTASSIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
MAGNESIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
MANGANESE, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
SODIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
NICKEL, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
LEAD, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
ANTIMONY, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
SELENIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
TIN, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
THALLIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
VANADIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
ZINC, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08
ZIRCONIUM, TOTAL	006	OI	08L0322	08/15/08	09/04/08	09/05/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
SILVER, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
ALUMINUM LABORTORY	LC1 BS	S	08L0322	N/A	09/04/08	09/05/08
ALUMINUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/05/08
ARSENIC LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
ARSENIC, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
BARIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
BERYLLIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
CALCIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
CALCIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
CADMIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
CADMIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
COBALT LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
COBALT, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
CHROMIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
CHROMIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
COPPER LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
COPPER, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
IRON LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
IRON, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
MERCURY LABORATORY	LC1 BS	S	08C0154	N/A	09/04/08	09/05/08
MERCURY, TOTAL	MB1	S	08C0154	N/A	09/04/08	09/05/08
POTASSIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/05/08
POTASSIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/05/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
MAGNESIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
MANGANESE LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
MANGANESE, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
SODIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/05/08
SODIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/05/08
NICKEL LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
NICKEL, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
LEAD LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
LEAD, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
ANTIMONY LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
ANTIMONY, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
SELENIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
SELENIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
TIN LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
TIN, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
THALLIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
THALLIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
VANADIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1299

DATE RECEIVED: 09/02/08 LVL LOT # :0809L002

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
ZINC LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
ZINC, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0322	N/A	09/04/08	09/04/08
ZIRCONIUM, TOTAL	MB1	S	08L0322	N/A	09/04/08	09/04/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088
LVL#: 0809L002
SDG/SAF#: K1299/RC-088

W.O.#: 60049-001-001-0001-00
Date Received: 09-02-08

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 6 oil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The sample results were reported on a wet weight "as received" basis.

   The samples were run with a 5-fold dilution for Mercury due to sample matrix.

   The samples were run on a different instrument for Aluminum analysis 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 TA0905A. The samples were rerun for Sodium and Potassium in file PS0905C, along with Aluminum.

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

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

   a.) Samples J177N3, J178L0, J178L1, J178L2, J178L3 in this preparation batch were found to contain Sodium at concentrations greater than 20X the preparation blank.

   b). The MB 08L0322 result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} the sample J177N2 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846

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 29 pages.

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. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J177N2	Iron	2,000	93.4

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9/10/08
Date

alm/m09-002

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08091002

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP 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
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✓6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010B		__200.7				__99
Manganese	✓6010B		__200.7				__99
Mercury	__7470A [3]	✓__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	✓6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	✓6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	✓6010B [1]		__200.7 [1]			__1620	__99

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J177N2	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	4.6	MG/KG	3.5	1.0
		Arsenic, Total	0.44 u	MG/KG	0.44	1.0
		Barium, Total	72.9	MG/KG	0.09	1.0
		Beryllium, Total	0.23	MG/KG	0.04	1.0
		Calcium, Total	95.4	MG/KG	3.5	1.0
		Cadmium, Total	0.28	MG/KG	0.04	1.0
		Cobalt, Total	0.55	MG/KG	0.17	1.0
		Chromium, Total	0.87	MG/KG	0.17	1.0
		Copper, Total	11.2	MG/KG	0.17	1.0
		Iron, Total	662	MG/KG	3.9	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	42.9 u	MG/KG	42.9	1.0
		Magnesium, Total	14.4	MG/KG	2.2	1.0
		Manganese, Total	3.2	MG/KG	0.03	1.0
		Sodium, Total	254	MG/KG	1.7	1.0
		Nickel, Total	0.58	MG/KG	0.17	1.0
		Lead, Total	1.3	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	0.57	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	25.3	MG/KG	0.52	1.0
		Zirconium, Total	4.4 u	MG/KG	4.4	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J177N3	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	9.5	MG/KG	3.9	1.0
		Arsenic, Total	0.49 u	MG/KG	0.49	1.0
		Barium, Total	15.8	MG/KG	0.1	1.0
		Beryllium, Total	0.25	MG/KG	0.05	1.0
		Calcium, Total	55.4	MG/KG	3.9	1.0
		Cadmium, Total	0.18	MG/KG	0.05	1.0
		Cobalt, Total	0.19 u	MG/KG	0.19	1.0
		Chromium, Total	2.2	MG/KG	0.19	1.0
		Copper, Total	2.0	MG/KG	0.19	1.0
		Iron, Total	76.4	MG/KG	4.4	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	47.8 u	MG/KG	47.8	1.0
		Magnesium, Total	9.9	MG/KG	2.4	1.0
		Manganese, Total	0.95	MG/KG	0.04	1.0
		Sodium, Total	1180	MG/KG	1.9	1.0
		Nickel, Total	0.19 u	MG/KG	0.19	1.0
		Lead, Total	4.4	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.58 u	MG/KG	0.58	1.0
		Tin, Total	1.0	MG/KG	0.58	1.0
		Thallium, Total	0.58 u	MG/KG	0.58	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	3.9	MG/KG	0.58	1.0
		Zirconium, Total	4.9 u	MG/KG	4.9	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J178L0	Silver, Total	0.09	u	MG/KG	0.09	1.0
		Aluminum, Total	3.7	u	MG/KG	3.7	1.0
		Arsenic, Total	0.46	u	MG/KG	0.46	1.0
		Barium, Total	0.24		MG/KG	0.09	1.0
		Beryllium, Total	8.6		MG/KG	0.05	1.0
		Calcium, Total	26.6		MG/KG	3.7	1.0
		Cadmium, Total	0.14		MG/KG	0.05	1.0
		Cobalt, Total	0.18	u	MG/KG	0.18	1.0
		Chromium, Total	0.18	u	MG/KG	0.18	1.0
		Copper, Total	0.55		MG/KG	0.18	1.0
		Iron, Total	27.1		MG/KG	4.1	1.0
		Mercury, Total	0.05	u	MG/KG	0.05	5.0
		Potassium, Total	45.2	u	MG/KG	45.2	1.0
		Magnesium, Total	5.2		MG/KG	2.3	1.0
		Manganese, Total	0.21		MG/KG	0.04	1.0
		Sodium, Total	4350		MG/KG	1.8	1.0
		Nickel, Total	0.18	u	MG/KG	0.18	1.0
		Lead, Total	0.28	u	MG/KG	0.28	1.0
		Antimony, Total	0.28	u	MG/KG	0.28	1.0
		Selenium, Total	0.55	u	MG/KG	0.55	1.0
		Tin, Total	0.60		MG/KG	0.55	1.0
		Thallium, Total	0.55	u	MG/KG	0.55	1.0
		Vanadium, Total	0.13	u	MG/KG	0.13	1.0
		Zinc, Total	3.3		MG/KG	0.55	1.0
		Zirconium, Total	49.0		MG/KG	4.6	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J178L1	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	4.3	MG/KG	3.8	1.0
		Arsenic, Total	0.48 u	MG/KG	0.48	1.0
		Barium, Total	0.31	MG/KG	0.1	1.0
		Beryllium, Total	65.8	MG/KG	0.05	1.0
		Calcium, Total	39.1	MG/KG	3.8	1.0
		Cadmium, Total	0.41	MG/KG	0.05	1.0
		Cobalt, Total	0.91	MG/KG	0.19	1.0
		Chromium, Total	0.28	MG/KG	0.19	1.0
		Copper, Total	0.80	MG/KG	0.19	1.0
		Iron, Total	346	MG/KG	4.3	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	47.3 u	MG/KG	47.3	1.0
		Magnesium, Total	6.1	MG/KG	2.4	1.0
		Manganese, Total	1.3	MG/KG	0.04	1.0
		Sodium, Total	2810	MG/KG	1.9	1.0
		Nickel, Total	0.21	MG/KG	0.19	1.0
		Lead, Total	0.32	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.58 u	MG/KG	0.58	1.0
		Tin, Total	0.91	MG/KG	0.58	1.0
		Thallium, Total	0.58 u	MG/KG	0.58	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	3.3	MG/KG	0.58	1.0
		Zirconium, Total	177	MG/KG	4.8	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J178L2	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	10.0	MG/KG	3.9	1.0
		Arsenic, Total	0.49 u	MG/KG	0.49	1.0
		Barium, Total	510	MG/KG	0.1	1.0
		Beryllium, Total	7.1	MG/KG	0.05	1.0
		Calcium, Total	105	MG/KG	3.9	1.0
		Cadmium, Total	0.23	MG/KG	0.05	1.0
		Cobalt, Total	0.64	MG/KG	0.20	1.0
		Chromium, Total	0.58	MG/KG	0.20	1.0
		Copper, Total	1.5	MG/KG	0.20	1.0
		Iron, Total	1780	MG/KG	4.4	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	49.7	MG/KG	48.3	1.0
		Magnesium, Total	28.3	MG/KG	2.4	1.0
		Manganese, Total	8.8	MG/KG	0.04	1.0
		Sodium, Total	2980	MG/KG	2.0	1.0
		Nickel, Total	0.31	MG/KG	0.20	1.0
		Lead, Total	0.54	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.59 u	MG/KG	0.59	1.0
		Tin, Total	0.59 u	MG/KG	0.59	1.0
		Thallium, Total	0.59 u	MG/KG	0.59	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	76.4	MG/KG	0.59	1.0
		Zirconium, Total	4.9 u	MG/KG	4.9	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J178L3	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	6.7	MG/KG	3.8	1.0
		Arsenic, Total	0.48 u	MG/KG	0.48	1.0
		Barium, Total	0.94	MG/KG	0.1	1.0
		Beryllium, Total	0.53	MG/KG	0.05	1.0
		Calcium, Total	51.1	MG/KG	3.8	1.0
		Cadmium, Total	0.09	MG/KG	0.05	1.0
		Cobalt, Total	0.19 u	MG/KG	0.19	1.0
		Chromium, Total	0.26	MG/KG	0.19	1.0
		Copper, Total	6.5	MG/KG	0.19	1.0
		Iron, Total	90.2	MG/KG	4.3	1.0
		Mercury, Total	0.05 u	MG/KG	0.05	5.0
		Potassium, Total	47.3 u	MG/KG	47.3	1.0
		Magnesium, Total	15.0	MG/KG	2.4	1.0
		Manganese, Total	1.1	MG/KG	0.04	1.0
		Sodium, Total	1410	MG/KG	1.9	1.0
		Nickel, Total	0.19 u	MG/KG	0.19	1.0
		Lead, Total	1.1	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.58 u	MG/KG	0.58	1.0
		Tin, Total	0.83	MG/KG	0.58	1.0
		Thallium, Total	0.58 u	MG/KG	0.58	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	6.3	MG/KG	0.58	1.0
		Zirconium, Total	4.8 u	MG/KG	4.8	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0322-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	8.8	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	5.9	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	0.29	MG/KG	0.20	1.0
		Iron, Total	5.1	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Sodium, Total	12.8	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	1.2	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0154-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J177N2	Silver, Total	4.1	0.09u	4.3	95.3	1.0
		Aluminum, Total	170	4.6	172	95.6	1.0
		Arsenic, Total	159	0.44u	172	92.4	1.0
		Barium, Total	248	72.9	172	101.4	1.0
		Beryllium, Total	4.4	0.23	4.3	96.9	1.0
		Calcium, Total	2140	95.4	2160	95.0	1.0
		Cadmium, Total	4.3	0.28	4.3	93.6	1.0
		Cobalt, Total	40.7	0.55	43.1	93.1	1.0
		Chromium, Total	17.3	0.87	17.2	95.5	1.0
		Copper, Total	33.1	11.2	21.6	101.4	1.0
		Iron, Total	804	662	86.2	165.5*	1.0
		Mercury, Total	1.8	0.05u	1.6	109.8	5.0
		Potassium, Total	2040	42.9 u	2160	94.5	1.0
		Magnesium, Total	1980	14.4	2160	91.0	1.0
		Manganese, Total	44.5	3.2	43.1	95.8	1.0
		Sodium, Total	2270	254	2160	93.4	1.0
		Nickel, Total	40.5	0.58	43.1	92.6	1.0
		Lead, Total	41.6	1.3	43.1	93.5	1.0
		Antimony, Total	39.5	0.26u	43.1	91.6	1.0
		Selenium, Total	136	0.52u	172	79.0	1.0
		Tin, Total	79.9	0.57	86.2	92.0	1.0
		Thallium, Total	159	0.52u	172	92.1	1.0
		Vanadium, Total	40.2	0.12u	43.1	93.3	1.0
		Zinc, Total	67.4	25.3	43.1	97.7	1.0
		Zirconium, Total	411	4.4 u	431	95.3	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J177N2	Silver, Total	0.09u	0.09u	NC	1.0
		Aluminum, Total	4.6	7.5	47.9	1.0
		Arsenic, Total	0.44u	0.46u	NC	1.0
		Barium, Total	72.9	61.9	16.3	1.0
		Beryllium, Total	0.23	0.25	8.0	1.0
		Calcium, Total	95.4	84.3	12.4	1.0
		Cadmium, Total	0.28	0.23	19.8	1.0
		Cobalt, Total	0.55	0.44	22.1	1.0
		Chromium, Total	0.87	0.72	18.6	1.0
		Copper, Total	11.2	8.9	22.9	1.0
		Iron, Total	662	538	20.7	1.0
		Mercury, Total	0.05u	0.04u	NC	5.0
		Potassium, Total	42.9 u	47.3	NC	1.0
		Magnesium, Total	14.4	13.0	10.2	1.0
		Manganese, Total	3.2	2.6	20.7	1.0
		Sodium, Total	254	206	21.0	1.0
		Nickel, Total	0.58	0.57	3.0	1.0
		Lead, Total	1.3	1.3	0.00	1.0
		Antimony, Total	0.26u	0.28u	NC	1.0
		Selenium, Total	0.52u	0.56u	NC	1.0
		Tin, Total	0.57	0.56u	NC	1.0
		Thallium, Total	0.52u	0.56u	NC	1.0
		Vanadium, Total	0.12u	0.13u	NC	1.0
		Zinc, Total	25.3	21.6	15.8	1.0
		Zirconium, Total	4.4 u	4.6 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/09/08

CLIENT: WC-HANFORD RC-088 K1299 LVL LOT #: 0809L002

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0322-LC1	Silver, LCS	47.9	50.0	MG/KG	95.8
		Aluminum, LCS	482	500	MG/KG	96.4
		Arsenic, LCS	897	1000	MG/KG	89.7
		Barium, LCS	471	500	MG/KG	94.3
		Beryllium, LCS	23.3	25.0	MG/KG	93.2
		Calcium, LCS	2350	2500	MG/KG	94.1
		Cadmium, LCS	22.8	25.0	MG/KG	91.2
		Cobalt, LCS	233	250	MG/KG	93.1
		Chromium, LCS	47.2	50.0	MG/KG	94.4
		Copper, LCS	118	125	MG/KG	94.8
		Iron, LCS	477	500	MG/KG	95.4
		Potassium, LCS	2330	2500	MG/KG	93.2
		Magnesium, LCS	2290	2500	MG/KG	91.8
		Manganese, LCS	70.7	75.0	MG/KG	94.3
		Sodium, LCS	2370	2500	MG/KG	94.9
		Nickel, LCS	186	200	MG/KG	93.2
		Lead, LCS	230	250	MG/KG	92.0
		Antimony, LCS	269	300	MG/KG	89.7
		Selenium, LCS	876	1000	MG/KG	87.6
		Tin, LCS	462	500	MG/KG	92.4
		Thallium, LCS	948	1000	MG/KG	94.8
		Vanadium, LCS	236	250	MG/KG	94.2
		Zinc, LCS	93.9	100	MG/KG	93.9
		Zirconium, LCS	468	500	MG/KG	93.7
LCS1	08C0154-LC1	Mercury, LCS	4.9	4.7	MG/KG	103.7

Lionville Laboratory Incorporated

Logbook #: 482

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0322
Date/Time Initiated: 9/4/08 1630
Date/Time Completed: 9/4/08 2300
Analyst(s): MW
Matrix: Soil Water Other: other liquids
Instr. Type: AA (ICP)
Parameters: HSL+Sn,Zr

Digested / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 94°

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 tyfter

TNW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
08081-137-001		1.04gm	100ml	<2	TO	liquid	brown oil		RAD
001R		1.05gm							
001S	1.0ml *	1.05gm							
002		1.20gm					amber liquid (more aqueous)		
003		1.03gm					brown oil		RAD
004		1.20gm					amber liquid (more aqueous)		
005		1.04gm					brown oil		
006		1.21gm					amber liquid (aq.) brown solid		
007		1.20gm					amber liquid (aq.)		
008		1.18gm					tan liq. & milky		
009		1.05gm							RAD
010		1.02gm					brown oil		
011		1.05gm					(milky)		
012		1.04gm					black oil		RAD
08081-002-001		1.15gm					brown oil		
001R		1.08gm							
001S	1.0ml *	1.16gm							
002		1.03gm					tan milky liq.		
003		1.09gm							
004		1.04gm					brown oil		RAD
005		1.02gm					thick brown oil		
006		1.04gm					brown oil		
08L0322-MB1		1.0gm				coarse	boiling chips		
LC1	1.0ml *	1.0gm							

— End of batch — MW 9/4/08

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

Reagent IDs:
HNO_3 G07057
HCL G15P40
H_2O_2 G15A18
1:1 HNO_3 9789-083-08
1:1 HCL

File ID#: IC032201
LIMS Transfer: (Y) N updated
Data Review By/Date:
RMP; 09/05/08

* also 0.5ml 6072-079-13 (Zr)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: RA
Date 9/4/08
Start Time/Temp: 1335 / 95
End Time/Temp: 1405 / 93°

Instrument ID HG-3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0154
Worksheet: HL090501
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes ✓ 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	S			10mL	50mL	
0.2 µg/L	551	0.100				
1.0	OLN	0.500				
2.0	CX	1.000				
5.0	OF	2.500				
10.0	ET	5.000				
ICV	8H	0.125	2.5			
CCV	1C	0.250	5.0			
ICB/CCB	PF					9.50L
MB1	C7			0.30		PBS154 100.00
LCS	3	*	*	0.30		LCSS154
0808L133-001	111E			0.35		100.00
002	WN			0.34		99.31
002R	SPRT			0.32		
002S	H5	0.500	1.0	0.34		
003	X5			0.34		99.60
004	N60			0.31		99.70
005	818			0.36		99.57
006	HR			0.37		99.30
007	CR			0.35		99.57
008	700			0.39		99.56
009	JB			0.35		99.40
010	92			0.38		97.53
0809L002-001	K			0.31		R 100.00
001R	Z4			0.34		
001S	508	0.0500	10.0	0.31		
002	AH			0.32		

Standard:	ID	Prep Date/Time
CAL/MS	R16072-78-14A	9/4/08 0930
CV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 9/5/08

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 # 498

Analyst: TLB
Date 9/4/08
Start Time/Temp: see page
End Time/Temp: 011

Instrument ID HG-3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0154
Worksheet: HG090501
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. 100.00
0809L002 - 003	M8			0.30	50mL	
004	290			0.31	↓	R
005	21			0.31	↓	↓
006	A94			0.31	↓	↓

AD 9/4/08

Standard:	ID	Prep Date/Time
ICAL/MS	See page 011	
ICV/CCV/LCS		

Reviewed By/Date: [signature] 9/5/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

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ville Laboratory Use Only

809L002

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A

VLI

000000026

Washington Closure Hanford RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

ville Laboratory Project Manager Charlotte Johnson

SW846 Del STD TAT 7 Days

Rec'd 9.2.08 Date Due 9-9-08

Refrigerator #			2													
#/Type Container	Liquid		1gl									1				
#/Type Container	Solid															
Volume	L.g.		250									1				
Preservatives			—													
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	~~Pest~~ PCB	Herb				Metal + Hg	CN	Ignit.					
		Lionville Laboratory Use Only														
			8625H	8PCB					Metal		IGN					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J177N2			X	8.14.08	0900		X	X					X		X			
002	J177N3					0925		X	X					X		X			
003	J178L0				8.15.08	0840		X	X					X		X			
004	J178L1					0850		X	X					X		X			
005	J178L2					0910		X	X					X		X			
006	J178L3					0925		X	X					X		X			

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

cial 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]	9.2.08	12:35

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-058

lector J. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9B	Data Turnaround ~~15~~ Days 7 BAK 8/21/08		
lect Designation 18-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No.	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment
pped To EBERLINE SERVICES / LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.

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	1	1	1	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											
7N2 / OTHER LIQUID / 8.14.08 / 0900	X	X	X	X				5898			
7N3 / OTHER LIQUID / 8.14.08 / 0925	X	X	X	X				5480			
~~7N4 / OTHER LIQUID~~											
~~7N5 / OTHER LIQUID~~											

JPD 7-10-08

CHAIN OF POSSESSION	Sign/Print Names
quished By/Removed From: aurora — Date/Time 1000 8-14-08	Received By/Stored In: R. Fellows R. Fahlberg — Date/Time 1000 8.14.08
quished By/Removed From: Fellows R. Fahlberg — Date/Time 1000 8.25.08	Received By/Stored In: Fed Ex — Date/Time
quished By/Removed From: Dawson — Date/Time 9.9.08/12:35	Received By/Stored In: D. Smith — Date/Time 9.2.08/12:35
quished By/Removed From: 9.2.08 — Date/Time	Received By/Stored In — Date/Time
quished By/Removed From — Date/Time	Received By/Stored In — Date/Time
quished By/Removed From — Date/Time	Received By/Stored In — Date/Time

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

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

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

H-EE-011

000000027

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-088-061	Page 1 of 1
lector B. Lawrence	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9B
ject Designation 618-7 Burial Ground - Other	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088	Data Turnaround ~~15~~ Days 7 RK 8/14/08
Chest No.	Field Logbook No. EL-1395-13	COA RG61878500	Method of Shipment	
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No.		Bill of Lading/Air Bill No.	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one

Preservation	Cool 4C	Cool 4C	None	None	None	Cool 4C
Type of Container	aG	aG	P	P	P	aG
No. of Container(s)	1	0	0	0	1	~~60~~ 1 8.15.08
Volume	250mL	125mL	125mL	60mL	500mL	60mL

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.	
78L0	OTHER	8-15-08	0840	X	X	X	X		X
78L1	OTHER		0850	X	X	X	X		X
78L2	OTHER		0910	X	X	X	X		X
78L3	OTHER		0925	X	X	X	X		X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	1030 8-15-08	R. Fahlberg R. Fahlberg	1030 8.15.08
R. Fahlberg R. Fahlberg	1000 8.15.08	Fed Ex	
Roadway	9.2.08/12:35	[illegible]	9.2.08/12:35

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Matrix *

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

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

CH-EE-011

000000028

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W. C. Hanford Date: 9.2.08

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

LvLI Batch #: 0809L002 Sample Custodian: D Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Roadway		Airbill # 868-043433-7
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 23.4 23.0 °C		DOT Boxes Box ~~Cooler~~ # 1 Box #2
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