0078696

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 9/2/08 Initials/Date
Kathy Wendt	H4-21	KW 9/2/08 Initials/Date

COMMENTS:

SDG K1293 **SAF-RC-088**

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
SEP 0 8 2008
EDMC

EBERLINE SERVICES

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

August 21, 2008

RECEIVED 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-08-084-7864, SDG K1293

Dear Ms. Kessner:

Enclosed is the data report for two solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on August 12, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1293 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Solid.

Note: the samples were mixtures of oil and metal chips, and were therefore treated as solids (other solids). Results are reported in pCi/g.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on August 19, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

The relative percent difference in the original and duplicate gross alpha results was 200%, greater than the control limit of 178%; the DER was 3.4. No other problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic 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

The relative percent difference in the original and duplicate Pu-239/240 results was 200%, greater than the control limit of 172%; the DER was 3.5. No other 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

08/21/8

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 K1293

SDG	7864
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1293

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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Melissa Mannion
Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	08/19/08

SDG 7864
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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 08/19/08

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 K1293

LAB SAMPLE SUMMARY

SDG 7864
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R808084-01	J177M8-A	618-7 Burial Ground-drum	SOLID		RC-088	RC-088-057	08/06/08 08:40
R808084-02	J177M9-A	618-7 Burial Ground-drum	SOLID		RC-088	RC-088-057	08/06/08 08:55
R808084-03	Lab Control Sample		SOLID		RC-088		
R808084-04	Method Blank		SOLID		RC-088		
R808084-05	Duplicate (R808084-01)	618-7 Burial Ground-drum	SOLID		RC-088		08/06/08 08:40
R808084-06	Duplicate (R808084-01)	618-7 Burial Ground-drum	SOLID		RC-088		08/06/08 08:40

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7864
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

: 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
364	RC-088-057	J177M8-A	SOLID	100.0	14.3 g		08/12/08	6	R808084-01	7864-001
		J177M9-A	SOLID	100.0	5.54 g		08/12/08	6	R808084-02	7864-002
		Method Blank	SOLID						R808084-04	7864-004
		Lab Control Sample	SOLID						R808084-03	7864-003
		Duplicate (R808084-01)	SOLID		14.3 g		08/12/08	6	R808084-05	7864-005
		Duplicate (R808084-01)	SOLID	100.0	14.3 g		08/12/08	6	R808084-06	7864-006

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7864
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6160-068	8.0	2			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6160-068	8.0	2			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6160-068	8.0	2			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6160-068	8.0	2			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6160-068	10.4	2			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6160-068	20.6	2			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6160-068	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6160-068	7.0	2			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 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7864
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
108084-01	J177M8-A			7864-001	93A/93		08/15/08	08/15/08	BW	Gross Alpha in Solids
08/06/08	618-7 Burial Ground-drum		SOLID	7864-001	93B/93		08/15/08	08/15/08	BW	Gross Beta in Solids
08/12/08	RC-088-057	RC-088		7864-001	AM		08/17/08	08/18/08	BW	Americium 241 in Solids
				7864-001	GAM		08/14/08	08/18/08	CSS	Gamma Scan
				7864-001	PU		08/17/08	08/18/08	BW	Plutonium, Isotopic in Solids
				7864-001	SR		08/15/08	08/18/08	BW	Total Strontium in Solids
				7864-001	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Solids
				7864-001	U		08/15/08	08/15/08	BW	Uranium, Isotopic in Solids
108084-02	J177M9-A			7864-002	93A/93		08/15/08	08/15/08	BW	Gross Alpha in Solids
08/06/08	618-7 Burial Ground-drum		SOLID	7864-002	93B/93		08/15/08	08/15/08	BW	Gross Beta in Solids
08/12/08	RC-088-057	RC-088		7864-002	AM		08/17/08	08/18/08	BW	Americium 241 in Solids
				7864-002	GAM		08/14/08	08/18/08	CSS	Gamma Scan
				7864-002	PU		08/17/08	08/18/08	BW	Plutonium, Isotopic in Solids
				7864-002	SR		08/15/08	08/18/08	BW	Total Strontium in Solids
				7864-002	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Solids
				7864-002	U		08/15/08	08/15/08	BW	Uranium, Isotopic in Solids
108084-03	Lab Control Sample			7864-003	93A/93		08/15/08	08/15/08	BW	Gross Alpha in Solids
			SOLID	7864-003	93B/93		08/15/08	08/15/08	BW	Gross Beta in Solids
		RC-088		7864-003	AM		08/17/08	08/18/08	BW	Americium 241 in Solids
				7864-003	GAM		08/15/08	08/18/08	CSS	Gamma Scan
				7864-003	PU		08/17/08	08/18/08	BW	Plutonium, Isotopic in Solids
				7864-003	SR		08/15/08	08/18/08	BW	Total Strontium in Solids
				7864-003	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Solids
				7864-003	U		08/15/08	08/15/08	BW	Uranium, Isotopic in Solids
108084-04	Method Blank			7864-004	93A/93		08/15/08	08/15/08	BW	Gross Alpha in Solids
			SOLID	7864-004	93B/93		08/15/08	08/15/08	BW	Gross Beta in Solids
		RC-088		7864-004	AM		08/17/08	08/18/08	BW	Americium 241 in Solids
				7864-004	GAM		08/15/08	08/18/08	CSS	Gamma Scan
				7864-004	PU		08/18/08	08/18/08	BW	Plutonium, Isotopic in Solids
				7864-004	SR		08/15/08	08/18/08	BW	Total Strontium in Solids
				7864-004	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Solids
				7864-004	U		08/15/08	08/15/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7864
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

B SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No.	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
08084-05	Duplicate (R808084-01)			7864-005	93A/93		08/15/08	08/15/08	BW	Gross Alpha in Solids
08/06/08	618-7 Burial Ground-drum		SOLID	7864-005	93B/93		08/15/08	08/15/08	BW	Gross Beta in Solids
08/12/08		RC-088		7864-005	AM		08/17/08	08/18/08	BW	Americium 241 in Solids
				7864-005	PU		08/17/08	08/18/08	BW	Plutonium, Isotopic in Solids
				7864-005	SR		08/15/08	08/18/08	BW	Total Strontium in Solids
				7864-005	TH		08/18/08	08/18/08	BW	Thorium, Isotopic in Solids
				7864-005	U		08/15/08	08/15/08	BW	Uranium, Isotopic in Solids
08084-06	Duplicate (R808084-01)			7864-006	GAM		08/14/08	08/18/08	CSS	Gamma Scan
08/06/08	618-7 Burial Ground-drum		SOLID							
08/12/08		RC-088								

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 Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	2			1	1	1	5
GAM	RC-088	Gamma Scan	GAMMA_GS	2			1	1	1	5
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	2			1	1	1	5
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	2			1	1	1	5
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				16			8	8	8	40

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-004 Method Blank

METHOD BLANK

SDG	7864	Client/Case no	Hanford	SDG_K1293	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808084-04	Client sample id	Method Blank		
Dept sample id	7864-004	Material/Matrix		SOLID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-1.19	2.5	6.43	10.0	U	93A
Gross Beta	12587-47-2	-1.59	3.1	5.60	15.0	U	93B
Total Strontium	SR-RAD	-0.078	1.2	2.44	1.00	U	SR
Americium 241	14596-10-2	0.208	0.42	0.767	1.00	U	AM
Thorium 228	14274-82-9	0.163	0.23	0.352	1.00	U	TH
Thorium 230	14269-63-7	-0.065	0.26	0.526	1.00	U	TH
Thorium 232	TH-232	0	0.065	0.155	1.00	U	TH
Uranium 233/234	U-233/234	0.281	0.28	0.538	1.00	U	U
Uranium 235	15117-96-1	0	0.17	0.651	1.00	U	U
Uranium 238	U-238	0.070	0.14	0.538	1.00	U	U
Plutonium 238	13981-16-3	-0.209	0.42	1.16	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.21	0.801	1.00	U	PU
Potassium 40	13966-00-2	U		84.1		U	GAM
Cobalt 60	10198-40-0	U		2.99	0.050	U	GAM
Cesium 137	10045-97-3	U		3.20	0.100	U	GAM
Radium 226	13982-63-3	U		7.36	0.100	U	GAM
Radium 228	15262-20-1	U		14.5	0.200	U	GAM
Europium 152	14683-23-9	U		9.27	0.100	U	GAM
Europium 154	15585-10-1	U		9.84	0.100	U	GAM
Europium 155	14391-16-3	U		7.17	0.100	U	GAM
Thorium 228	14274-82-9	U		5.69		U	GAM
Thorium 232	TH-232	U		14.5		U	GAM
Uranium 235	15117-96-1	U		13.3		U	GAM
Uranium 238	U-238	U		373		U	GAM
Americium 241	14596-10-2	U		3.27		U	GAM

618-7 Burial Ground - Other Solid

QC-BLANK #66836

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7864

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1293

Contract No. S00W235A00

Lab sample id R808084-03

Dept sample id 7864-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	107	17	5.08	10.0		93A	102	4.1	105	59-141	70-130
Gross Beta	87.4	7.1	5.40	15.0		93B	92.8	3.7	94	80-120	80-120
Total Strontium	96.1	5.8	2.61	1.00		SR	92.8	3.7	104	80-120	80-120
Americium 241	111	8.3	0.751	1.00		AM	102	4.1	109	81-119	80-120
Thorium 230	89.8	4.5	0.567	1.00		TH	94.5	3.8	95	85-115	80-120
Uranium 233/234	87.4	7.6	3.44	1.00		U	92.9	3.7	94	82-118	80-120
Uranium 235	71.8	6.6	0.680	1.00		U	75.5	3.0	95	82-118	80-120
Uranium 238	85.6	7.4	3.29	1.00		U	101	4.0	85	84-116	80-120
Plutonium 238	118	7.6	0.967	1.00		PU	118	4.7	100	83-117	80-120
Plutonium 239/240	131	8.1	0.436	1.00		PU	132	5.3	99	84-116	80-120
Cobalt 60	108	4.8	2.57	0.050		GAM	102	4.1	106	86-114	80-120
Cesium 137	123	4.4	3.27	0.100		GAM	114	4.6	108	86-114	80-120

618-7 Burial Ground - Other Solid

QC-LCS #66835

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-005 J177M8-A

DUPLICATE

SDG	7864			Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808084-05	Lab sample id	R808084-01	Client sample id	J177M8-A
Dept sample id	7864-005	Dept sample id	7864-001	Location/Matrix	618-7 Burial Ground-drum SOLID
		Received	08/12/08	Collected/Weight	08/06/08 08:40 14.3 g
		% solids	100.0	Custody/SAF No	RC-088-057 RC-088

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	-1.12	4.1	8.62	10.0	U	93A	12.1	6.2	6.08		200	178	3.4
Gross Beta	1.71	3.6	5.94	15.0	U	93B	7.79	3.6	5.33		128	163	2.4
Total Strontium	-0.955	1.0	2.39	1.00	U	SR	0.925	1.6	3.07	U	-		2.0
Americium 241	-0.167	0.50	1.12	1.00	U	AM	0	0.53	1.18	U	-		0.5
Thorium 228	0.262	0.39	0.724	1.00	U	TH	-0.035	0.21	0.371	U	-		1.3
Thorium 230	0.130	0.52	0.802	1.00	U	TH	-0.334	0.25	0.557	U	-		1.6
Thorium 232	0.065	0.13	0.499	1.00	U	TH	-0.053	0.070	0.168	U	-		1.6
Uranium 233/234	0.887	0.55	0.522	1.00		U	1.52	0.65	0.610		53	108	1.5
Uranium 235	0.083	0.17	0.632	1.00	U	U	0.097	0.19	0.739	U	-		0.1
Uranium 238	0.887	0.55	0.522	1.00		U	1.52	0.65	0.610		53	108	1.5
Plutonium 238	0.438	0.44	0.605	1.00	U	PU	0.372	0.50	0.830	U	-		0.2
Plutonium 239/240	0	0.11	0.419	1.00	U	PU	0.681	0.37	0.474		200	172	3.5

618-7 Burial Ground - Other Solid

QC-DUP#1 66837

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-006 J177M8-A

DUPLICATE

SDG	7864			Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808084-06	Lab sample id	R808084-01	Client sample id	J177M8-A
Dept sample id	7864-006	Dept sample id	7864-001	Location/Matrix	618-7 Burial Ground-drum SOLID
		Received	08/12/08	Collected/Weight	08/06/08 08:40 14.3 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-057 RC-088

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Potassium 40	U		175		U	GAM	U		159	U	-		0.1
Cobalt 60	U		5.87	0.050	U	GAM	U		5.21	U	-		0.2
Cesium 137	U		5.89	0.100	U	GAM	U		5.27	U	-		0.2
Radium 226	U		14.2	0.100	U	GAM	U		13.8	U	-		0
Radium 228	U		27.9	0.200	U	GAM	U		27.2	U	-		0
Europium 152	U		15.9	0.100	U	GAM	U		15.4	U	-		0
Europium 154	U		20.7	0.100	U	GAM	U		19.9	U	-		0.1
Europium 155	U		13.4	0.100	U	GAM	U		11.2	U	-		0.3
Thorium 228	U		10.1		U	GAM	U		8.88	U	-		0.2
Thorium 232	U		27.9		U	GAM	U		27.2	U	-		0
Uranium 235	U		27.9		U	GAM	U		23.4	U	-		0.2
Uranium 238	U		681		U	GAM	U		639	U	-		0.1
Americium 241	U		4.89		U	GAM	U		4.67	U	-		0.1

618-7 Burial Ground - Other Solid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-001 J177M8-A

DATA SHEET

SDG	7864	Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808084-01	Client sample id	J177M8-A
Dept sample id	7864-001	Location/Matrix	618-7 Burial Ground-drum SOLID
Received	08/12/08	Collected/Weight	08/06/08 08:40 14.3 g
% solids	100.0	Custody/SAF No	RC-088-057 RC-088

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	12.1	6.2	6.08	10.0		93A
Gross Beta	12587-47-2	7.79	3.6	5.33	15.0		93B
Total Strontium	SR-RAD	0.925	1.6	3.07	1.00	U	SR
Americium 241	14596-10-2	0	0.53	1.18	1.00	U	AM
Thorium 228	14274-82-9	-0.035	0.21	0.371	1.00	U	TH
Thorium 230	14269-63-7	-0.334	0.25	0.557	1.00	U	TH
Thorium 232	TH-232	-0.053	0.070	0.168	1.00	U	TH
Uranium 233/234	U-233/234	1.52	0.65	0.610	1.00		U
Uranium 235	15117-96-1	0.097	0.19	0.739	1.00	U	U
Uranium 238	U-238	1.52	0.65	0.610	1.00		U
Plutonium 238	13981-16-3	0.372	0.50	0.830	1.00	U	PU
Plutonium 239/240	PU-239/240	0.681	0.37	0.474	1.00		PU
Potassium 40	13966-00-2	U		159		U	GAM
Cobalt 60	10198-40-0	U		5.21	0.050	U	GAM
Cesium 137	10045-97-3	U		5.27	0.100	U	GAM
Radium 226	13982-63-3	U		13.8	0.100	U	GAM
Radium 228	15262-20-1	U		27.2	0.200	U	GAM
Europium 152	14683-23-9	U		15.4	0.100	U	GAM
Europium 154	15585-10-1	U		19.9	0.100	U	GAM
Europium 155	14391-16-3	U		11.2	0.100	U	GAM
Thorium 228	14274-82-9	U		8.88		U	GAM
Thorium 232	TH-232	U		27.2		U	GAM
Uranium 235	15117-96-1	U		23.4		U	GAM
Uranium 238	U-238	U		639		U	GAM
Americium 241	14596-10-2	U		4.67		U	GAM

618-7 Burial Ground - Other Solid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7864-002 J177M9-A

DATA SHEET

SDG	7864	Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808084-02	Client sample id	J177M9-A
Dept sample id	7864-002	Location/Matrix	618-7 Burial Ground-drum SOLID
Received	08/12/08	Collected/Weight	08/06/08 08:55 5.54 g
% solids	100.0	Custody/SAF No	RC-088-057 RC-088

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	2.88	4.7	7.83	10.0	U	93A
Gross Beta	12587-47-2	3.28	4.0	6.46	15.0	U	93B
Total Strontium	SR-RAD	0.108	1.3	2.54	1.00	U	SR
Americium 241	14596-10-2	0.144	0.43	0.884	1.00	U	AM
Thorium 228	14274-82-9	0	0.23	0.398	1.00	U	TH
Thorium 230	14269-63-7	-0.233	0.23	0.510	1.00	U	TH
Thorium 232	TH-232	0	0.078	0.186	1.00	U	TH
Uranium 233/234	U-233/234	4.43	1.2	0.674	1.00		U
Uranium 235	15117-96-1	0.852	0.51	0.652	1.00		U
Uranium 238	U-238	0.845	0.57	0.538	1.00		U
Plutonium 238	13981-16-3	0.245	0.49	0.783	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.16	0.626	1.00	U	PU
Potassium 40	13966-00-2	U		106		U	GAM
Cobalt 60	10198-40-0	U		6.93	0.050	U	GAM
Cesium 137	10045-97-3	U		5.27	0.100	U	GAM
Radium 226	13982-63-3	U		10.8	0.100	U	GAM
Radium 228	15262-20-1	U		22.5	0.200	U	GAM
Europium 152	14683-23-9	U		14.4	0.100	U	GAM
Europium 154	15585-10-1	U		14.7	0.100	U	GAM
Europium 155	14391-16-3	U		11.1	0.100	U	GAM
Thorium 228	14274-82-9	U		7.68		U	GAM
Thorium 232	TH-232	U		22.5		U	GAM
Uranium 235	15117-96-1	U		21.0		U	GAM
Uranium 238	U-238	U		591		U	GAM
Americium 241	14596-10-2	U		22.6		U	GAM

618-7 Burial Ground - Other Solid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test AM Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

ıB ıMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
:eparation batch 6160-068						
;08084-01			7864-001	J177M8-A	U	
;08084-02			7864-002	J177M9-A	U	
;08084-03			7864-003	LCS (QC ID=66835)	ok	
;08084-04			7864-004	BLK (QC ID=66836)	U	
;08084-05			7864-005	Duplicate (R808084-01)	-	U

›minal values and limits from method RDLs (pCi/g) 1.00
.8-7 Burial Ground - Other Solid

ETHOD PERFORMANCE

ıB ıMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6160-068 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 68																
;08084-01			J177M8-A	1.18	0.100			52		244			11	08/15/08	08/17	SS-027
;08084-02			J177M9-A	0.884	0.100			74		244			11	08/15/08	08/17	SS-028
;08084-03			LCS (QC ID=66835)	0.751	0.100			73		244				08/15/08	08/17	SS-031
;08084-04			BLK (QC ID=66836)	0.767	0.100			79		244				08/15/08	08/17	SS-032
;08084-05			Duplicate (R808084-01) (QC ID=66837)	1.12	0.100			58		245			11	08/15/08	08/17	SS-033
›minal values and limits from method				1.00	0.100			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	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 FOR 5 SAMPLES
MDA 0.940 ± 0.398
YIELD 67 ± 23

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test PU Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240
:eparation batch 6160-068						
108084-01			7864-001	J177M8-A	U	0.681
108084-02			7864-002	J177M9-A	U	U
108084-03			7864-003	LCS (QC ID=66835)	ok	ok
108084-04			7864-004	BLK (QC ID=66836)	U	U
108084-05			7864-005	Duplicate (R808084-01)	- U	OUT U
›minal values and limits from method				RDLs (pCi/g)	1.00	1.00
.8-7 Burial Ground - Other Solid						

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-068 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 68																
108084-01			J177M8-A	0.830	0.100			81		244			11	08/17/08	08/17	SS-038
108084-02			J177M9-A	0.783	0.100			68		245			11	08/17/08	08/17	SS-042
108084-03			LCS (QC ID=66835)	0.967	0.100			79		245				08/17/08	08/17	SS-055
108084-04			BLK (QC ID=66836)	1.16	0.100			83		128				08/17/08	08/18	SS-027
108084-05			Duplicate (R808084-01) (QC ID=66837)	0.605	0.100			82		245			11	08/17/08	08/17	SS-061
›minal values and limits from method				1.00	0.100			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.869 ± 0.416
YIELD 79 ± 12

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test TH Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

LB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
:eparation batch 6160-068					
:08084-01			7864-001	J177M8-A	U
:08084-02			7864-002	J177M9-A	U
:08084-03			7864-003	LCS (QC ID=66835)	ok
:08084-04			7864-004	BLK (QC ID=66836)	U
:08084-05			7864-005	Duplicate (R808084-01)	- U

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

ETHOD PERFORMANCE

LB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-068 2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 68																
:08084-01			J177M8-A	0.557	0.100			91		699			11	08/15/08	08/17	SS-027
:08084-02			J177M9-A	0.510	0.100			95		699			11	08/15/08	08/17	SS-028
:08084-03			LCS (QC ID=66835)	0.567	0.100			94		700				08/15/08	08/17	SS-031
:08084-04			BLK (QC ID=66836)	0.526	0.100			104		700				08/15/08	08/17	SS-033
:08084-05			Duplicate (R808084-01) (QC ID=66837)	0.802	0.100			97		174			12	08/15/08	08/18	SS-061
ominal values and limits from method				1.00	0.100			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.592 ± 0.239
YIELD 96 ± 10

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test U Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

B MPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
eparation batch 6160-068											
08084-01			7864-001	J177M8-A	1.52	U	1.52	100	60	6	13
08084-02			7864-002	J177M9-A	4.43	0.852	0.845	524	381	101	91
08084-03			7864-003	LCS (QC ID=66835)	ok	ok	ok				
08084-04			7864-004	BLK (QC ID=66836)	U	U	U				
08084-05			7864-005	Duplicate (R808084-01)	ok	- U	ok	100	88	9	20
minal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
8-7 Burial Ground - Other Solid							Averages	241		39	

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
eparation batch 6160-068			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 68												
08084-01			J177M8-A	0.739	0.100			69		200			9	08/14/08	08/15	SS-056
08084-02			J177M9-A	0.674	0.100			78		200			9	08/14/08	08/15	SS-057
08084-03			LCS (QC ID=66835)	3.44	0.100			74		201				08/14/08	08/15	SS-058
08084-04			BLK (QC ID=66836)	0.651	0.100			77		203				08/14/08	08/15	SS-061
08084-05			Duplicate (R808084-01) (QC ID=66837)	0.632	0.100			82		192			9	08/14/08	08/15	SS-051
minal values and limits from method				1.00	0.100			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 1.23 ± 2.48
YIELD 76 ± 10

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test SR Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
:eparation batch 6160-068					
308084-01			7864-001	J177M8-A	U
308084-02			7864-002	J177M9-A	U
308084-03			7864-003	LCS (QC ID=66835)	ok
308084-04			7864-004	BLK (QC ID=66836)	U
308084-05			7864-005	Duplicate (R808084-01)	- U

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

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-068 2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 68																
308084-01			J177M8-A	3.07	0.100			96		100			9	08/15/08	08/15	GRB-217
308084-02			J177M9-A	2.54	0.100			97		100			9	08/15/08	08/15	GRB-207
308084-03			LCS (QC ID=66835)	2.61	0.100			95		100				08/15/08	08/15	GRB-217
308084-04			BLK (QC ID=66836)	2.44	0.100			94		100				08/15/08	08/15	GRB-218
308084-05			Duplicate (R808084-01) (QC ID=66837)	2.39	0.100			96		100			9	08/15/08	08/15	GRB-220
ominal values and limits from method				1.00	0.100			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	CP-381	Strontium in Solids, rev 1

AVERAGES ± 2 SD MDA 2.61 ± 0.542
FOR 5 SAMPLES YIELD 96 ± 2

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test 93A Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
eparation batch 6160-068					
808084-01	93		7864-001	J177M8-A	12.1
808084-02	93		7864-002	J177M9-A	U
808084-03	93		7864-003	LCS (QC ID=66835)	ok
808084-04	93		7864-004	BLK (QC ID=66836)	U
808084-05	93		7864-005	Duplicate (R808084-01)	OUT U
minal values and limits from method				RDLs (pCi/g)	10.0
18-7 Burial Ground - Other Solid					

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6160-068 2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 68																
808084-01	93		J177M8-A	6.08	0.100			56		100			9	08/14/08	08/15	GRB-109
808084-02	93		J177M9-A	7.83	0.100			101		100			9	08/14/08	08/15	GRB-110
808084-03	93		LCS (QC ID=66835)	5.08	0.100			60		100				08/14/08	08/15	GRB-111
808084-04	93		BLK (QC ID=66836)	6.43	0.100			59		100				08/14/08	08/15	GRB-112
808084-05	93		Duplicate (R808084-01) (QC ID=66837)	8.62	0.100			55		100			9	08/14/08	08/15	GRB-115
minal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD	MDA	6.81	± 2.83
FOR 5 SAMPLES	RESIDUE	66	± 39

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test 93B Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
:eparation batch 6160-068						
308084-01	93		7864-001	J177M8-A	7.79	
308084-02	93		7864-002	J177M9-A	U	
308084-03	93		7864-003	LCS (QC ID=66835)	ok	
308084-04	93		7864-004	BLK (QC ID=66866)	U	
308084-05	93		7864-005	Duplicate (R808084-01)	ok	U

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

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-068 2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 68																
308084-01	93		J177M8-A	5.33	0.100			56		100			9	08/14/08	08/15	GRB-109
308084-02	93		J177M9-A	6.46	0.100			101		100			9	08/14/08	08/15	GRB-110
308084-03	93		LCS (QC ID=66835)	5.40	0.100			60		100				08/14/08	08/15	GRB-111
308084-04	93		BLK (QC ID=66866)	5.60	0.100			59		100				08/14/08	08/15	GRB-112
308084-05	93		Duplicate (R808084-01) (QC ID=66837)	5.94	0.100			55		100			9	08/14/08	08/15	GRB-115
ominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 5.75 ± 0.928
RESIDUE 66 ± 39

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test GAM Matrix SOLID
SDG 7864
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

B MPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
eparation batch 6160-068								
08084-01			7864-001	J177M8-A	U		U	
08084-02			7864-002	J177M9-A	U		U	
08084-03			7864-003	LCS (QC ID=66835)	ok		ok	
08084-04			7864-004	BLK (QC ID=66836)	U		U	
08084-06			7864-006	Duplicate (R808084-01)	-	U	-	U
minal values and limits from method				RDLs (pCi/g)	0.050		0.100	
8-7 Burial Ground - Other Solid								

ETHOD PERFORMANCE

B MPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
eparation batch 6160-068			2σ prep error 7.0 %	Reference Lab Notebook #6160, pg. 68												
08084-01			J177M8-A	1370	3.40					115			8	08/14/08	08/14	JR,06,00
08084-02			J177M9-A	1280	2.05					115			8	08/14/08	08/14	JR,05,00
08084-03			LCS (QC ID=66835)	2.57	2.05					1001				08/14/08	08/15	JR,05,00
08084-04			BLK (QC ID=66836)	784	2.05					1001				08/14/08	08/15	JR,06,00
08084-06			Duplicate (R808084-01) (QC ID=66852)	1510	3.40					113			8	08/14/08	08/14	JR,06,00
minal values and limits from method				0.050	2.05					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	SPP-073	Soil Leaching 10-200 g Aliquot, rev 0
	SPP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD MDA 989 ± 1230
FOR 5 SAMPLES YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/19/08

SDG 7864
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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 08/19/08

SDG 7864
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

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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Version Ver 1.0
Form DVD-RG
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SDG 7864
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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REPORT GUIDE

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DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

Client Hanford
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Case no SDG K1293

DATA SHEET

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

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

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

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Protocol Hanford1
Version Ver 1.0
Form DVD-RG
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REPORT GUIDE

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Contract No. S00W235A00
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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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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 7864
Contact Melissa C. Mannion

REPORT GUIDE

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MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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GUIDE, cont.

Client Hanford
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MATRIX SPIKE

for the recovery.

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

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

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Version Ver 1.0
Form DVD-RG
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REPORT GUIDE

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-057	Page 1 of 1

Collector B. Lawrence / E. Harries / DeBuigne / W. Sexsmith	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code 9F	**Data Turnaround** 15 Days 7 JRD 8-6-08		
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums) K1293 (7864)	**SAF No.** RC-088	
Ice Chest No. GWS-00~~1~~ 2 mm 8/11/08	**Field Logbook No.** EL-1395-12	**COA** RG61878500	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES/ LIONVILLE	**Offsite Property No.** A080326		**Bill of Lading/Air Bill No.** See ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	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.					RCF#	Drum#

solid MCM 8/13/8

JRD 8-6-08

Sample No.	Matrix *	Sample Date	Sample Time										
J177M8 -A	OTHER ~~LIQUID~~	8/6/08	0840					X				J177K8	5142
J177M9 -A	OTHER ~~LIQUID~~	8/6/08	0855					X				J177K9	5207
~~J177N0~~	~~OTHER LIQUID~~												
~~J177N1~~	~~OTHER LIQUID~~	JRD 8-6-08											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Whitney Sexsmith	1100 8/6/08	Received By/Stored In JRDeBuigne	JRD 8/6/08 ~~1100~~ 8/6/08
Relinquished By/Removed From JRDeBuigne	1330 8/6/08	Received By/Stored In 1060 1A	1330 8/6/08
Relinquished By/Removed From 1060/1A	0845 AUG 11 2008	Received By/Stored In MSTankovich	0845 AUG 11 2008
Relinquished By/Removed From MSTankovich	0845 AUG 11 2008	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex		Received By/Stored In	08/12/08 09:00
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

JC

Matrix *

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 08/12/08 09:50 CoC No. RC-088-057

Container I.D. No. GWS-002 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 2 Sample Matrix X SOLID, LIQUID
7. Number of containers per sample: 1 (Or see CoC ____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [ ] No [X] SEE NOTE
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [X] pH ____ Preservative ____
13. Describe any anomalies:
    ACTUAL MATRIX IS COMBINATION OF LIQUID AND SOLID
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date ____
15. Inspected by [signature] Date: 08/12/08 Time: 10:50

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

Ion Chamber Ser. No ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. 10042 Calibration date 10 JUL 08

Form SCP-02. 07-30-07

"over 55 years of quality nuclear services"

EBERLINE SERVICES

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

August 20, 2008

RECEIVED
AUG 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-08-085-7865, SDG K1293

Dear Ms. Kessner:

Enclosed is the data report for two liquid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on August 12, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1293 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other Liquids.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on July 31, 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

The relative percent difference in the original and duplicate Pu-239/240 analysis results was 173%, greater than the control limit of 148%; the DER was 3.5. No other 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

08/20/08

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 K1293

SDG	7865
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1293

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

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

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Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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 08/20/08

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 K1293

SDG 7865
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R808085-01	J177M8-B	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-057	08/06/08 08:40
R808085-02	J177M9-B	618-7 Burial Grnd(drums)	LIQUID		RC-088	RC-088-057	08/06/08 08:55
R808085-03	Lab Control Sample		LIQUID		RC-088		
R808085-04	Method Blank		LIQUID		RC-088		
R808085-05	Duplicate (R808085-02)	618-7 Burial Grnd(drums)	LIQUID		RC-088		08/06/08 08:55

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

QC SUMMARY

SDG 7865
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

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
865	RC-088-057	J177M8-B	LIQUID		510 mL		08/12/08	6	R808085-01	7865-001
		J177M9-B	LIQUID		475 mL		08/12/08	6	R808085-02	7865-002
		Method Blank	LIQUID						R808085-04	7865-004
		Lab Control Sample	LIQUID						R808085-03	7865-003
		Duplicate (R808085-02)	LIQUID		475 mL		08/12/08	6	R808085-05	7865-005

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7865
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

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	6160-071	8.0	2			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6160-071	8.0	2			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6160-071	8.0	2			1	1	1/1		
U	LIQUID	Uranium in Liquid	6160-071	8.0	2			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6160-071	10.4	2			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6160-071	20.6	2			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6160-071	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6160-071	7.0	2			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 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7865
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
808085-01	J177M8-B			7865-001	93A/93		08/15/08	08/19/08	BW	Gross Alpha in Liquid
08/06/08	618-7 Burial Grnd(drums)		LIQUID	7865-001	93B/93		08/15/08	08/19/08	BW	Gross Beta in Liquid
08/12/08	RC-088-057	RC-088		7865-001	AM		08/18/08	08/19/08	BW	Americium 241 in Liquid
				7865-001	GAM		08/14/08	08/18/08	CSS	Gamma Scan in Liquid
				7865-001	PU		08/17/08	08/19/08	BW	Plutonium-238,239/240, Liquid
				7865-001	SR		08/15/08	08/18/08	BW	Total Strontium in Liquids
				7865-001	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Liquid
				7865-001	U		08/15/08	08/18/08	BW	Uranium in Liquid
808085-02	J177M9-B			7865-002	93A/93		08/15/08	08/19/08	BW	Gross Alpha in Liquid
08/06/08	618-7 Burial Grnd(drums)		LIQUID	7865-002	93B/93		08/15/08	08/19/08	BW	Gross Beta in Liquid
08/12/08	RC-088-057	RC-088		7865-002	AM		08/17/08	08/19/08	BW	Americium 241 in Liquid
				7865-002	GAM		08/14/08	08/18/08	CSS	Gamma Scan in Liquid
				7865-002	PU		08/19/08	08/19/08	BW	Plutonium-238,239/240, Liquid
				7865-002	SR		08/15/08	08/18/08	BW	Total Strontium in Liquids
				7865-002	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Liquid
				7865-002	U		08/15/08	08/18/08	BW	Uranium in Liquid
808085-03	Lab Control Sample			7865-003	93A/93		08/15/08	08/19/08	BW	Gross Alpha in Liquid
			LIQUID	7865-003	93B/93		08/15/08	08/19/08	BW	Gross Beta in Liquid
		RC-088		7865-003	AM		08/17/08	08/19/08	BW	Americium 241 in Liquid
				7865-003	GAM		08/14/08	08/18/08	CSS	Gamma Scan in Liquid
				7865-003	PU		08/17/08	08/19/08	BW	Plutonium-238,239/240, Liquid
				7865-003	SR		08/15/08	08/18/08	BW	Total Strontium in Liquids
				7865-003	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Liquid
				7865-003	U		08/15/08	08/18/08	BW	Uranium in Liquid
808085-04	Method Blank			7865-004	93A/93		08/15/08	08/19/08	BW	Gross Alpha in Liquid
			LIQUID	7865-004	93B/93		08/15/08	08/19/08	BW	Gross Beta in Liquid
		RC-088		7865-004	AM		08/18/08	08/19/08	BW	Americium 241 in Liquid
				7865-004	GAM		08/15/08	08/18/08	CSS	Gamma Scan in Liquid
				7865-004	PU		08/17/08	08/19/08	BW	Plutonium-238,239/240, Liquid
				7865-004	SR		08/15/08	08/18/08	BW	Total Strontium in Liquids
				7865-004	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Liquid
				7865-004	U		08/15/08	08/18/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

SDG 7865
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
808085-05	Duplicate (R808085-02)			7865-005	93A/93		08/15/08	08/19/08	BW	Gross Alpha in Liquid
08/06/08	618-7 Burial Grnd(drums)		LIQUID	7865-005	93B/93		08/15/08	08/19/08	BW	Gross Beta in Liquid
08/12/08		RC-088		7865-005	AM		08/17/08	08/19/08	BW	Americium 241 in Liquid
				7865-005	GAM		08/15/08	08/18/08	CSS	Gamma Scan in Liquid
				7865-005	PU		08/19/08	08/19/08	BW	Plutonium-238,239/240, Liquid
				7865-005	SR		08/15/08	08/18/08	BW	Total Strontium in Liquids
				7865-005	TH		08/17/08	08/18/08	BW	Thorium, Isotopic in Liquid
				7865-005	U		08/15/08	08/18/08	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	2			1	1	1	5
93B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	2			1	1	1	5
AM	RC-088	Americium 241 in Liquid	AMCMISO_IE_PLATE_AEA	2			1	1	1	5
GAM	RC-088	Gamma Scan in Liquid	GAMMA_GS	2			1	1	1	5
PU	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	2			1	1	1	5
SR	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TH	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	2			1	1	1	5
U	RC-088	Uranium in Liquid	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				16			8	8	8	40

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-004 Method Blank

METHOD BLANK

SDG	7865	Client/Case no	Hanford	SDG_K1293	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808085-04	Client sample id	Method Blank		
Dept sample id	7865-004	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	0.740	3.7	7.17	10.0	U	93A
Gross Beta	12587-47-2	-1.50	3.5	6.22	15.0	U	93B
Total Strontium	SR-RAD	-0.052	0.17	0.342	1.00	U	SR
Americium 241	14596-10-2	0.036	0.14	0.342	1.00	U	AM
Thorium 228	14274-82-9	0.021	0.084	0.151	1.00	U	TH
Thorium 230	14269-63-7	0.010	0.15	0.279	1.00	U	TH
Thorium 232	TH-232	-0.031	0.042	0.116	1.00	U	TH
Uranium 233/234	U-233/234	-0.020	0.039	0.150	1.00	U	U
Uranium 235	15117-96-1	0	0.047	0.182	1.00	U	U
Uranium 238	U-238	0	0.039	0.150	1.00	U	U
Plutonium 238	13981-16-3	0.016	0.031	0.120	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.016	0.031	0.120	1.00	U	PU
Potassium 40	13966-00-2	U		0.806		U	GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.050	U	GAM
Radium 226	13982-63-3	U		0.059	0.100	U	GAM
Radium 228	15262-20-1	U		0.124	0.200	U	GAM
Europium 152	14683-23-9	U		0.071	0.100	U	GAM
Europium 154	15585-10-1	U		0.068	0.100	U	GAM
Europium 155	14391-16-3	U		0.065	0.100	U	GAM
Thorium 228	14274-82-9	U		0.049		U	GAM
Thorium 232	TH-232	U		0.124		U	GAM
Uranium 235	15117-96-1	U		0.112		U	GAM
Uranium 238	U-238	U		3.07		U	GAM
Americium 241	14596-10-2	U		0.056		U	GAM

618-7 Burial Ground - Other Liquids

QC-BLANK #66839

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7865

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1293

Contract No. S00W235A00

Lab sample id R808085-03

Dept sample id 7865-003

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	117	18	5.64	10.0		93A	124	5.0	94	63-137	70-130
Gross Beta	116	8.5	6.00	15.0		93B	123	4.9	94	80-120	70-130
Total Strontium	11.9	0.65	0.271	1.00		SR	11.3	0.45	105	80-120	80-120
Americium 241	29.0	2.1	0.274	1.00		AM	28.0	1.1	104	82-118	80-120
Thorium 230	48.6	2.5	0.252	1.00		TH	52.0	2.1	93	85-115	80-120
Uranium 233/234	24.3	2.1	0.944	1.00		U	24.2	0.97	100	81-119	80-120
Uranium 235	20.9	1.9	0.176	1.00		U	19.6	0.78	107	80-120	80-120
Uranium 238	24.7	2.1	0.899	1.00		U	26.2	1.0	94	83-117	80-120
Plutonium 238	31.0	2.1	0.178	1.00		PU	32.2	1.3	96	84-116	80-120
Plutonium 239/240	34.8	2.3	0.123	1.00		PU	36.2	1.4	96	84-116	80-120
Cobalt 60	2.55	0.090	0.058	0.050		GAM	2.46	0.098	104	86-114	80-120
Cesium 137	3.03	0.11	0.068	0.050		GAM	2.80	0.11	108	86-114	80-120

618-7 Burial Ground - Other Liquids

QC-LCS #66838

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-005 J177M9-B

DUPLICATE

SDG	7865	Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R808085-05	Lab sample id	R808085-02
Dept sample id	7865-005	Dept sample id	7865-002
		Received	08/12/08
Client sample id	J177M9-B		
Location/Matrix	618-7 Burial Grnd(drums) LIQUID		
Collected/Volume	08/06/08 08:55 475 mL		
Custody/SAF No	RC-088-057 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	4.68	2.6	3.22	10.0		93A	0.218	1.2	2.35	U	182	185	3.0
Gross Beta	-0.160	3.5	6.00	15.0	U	93B	0.585	3.7	6.31	U	-		0.3
Total Strontium	-0.078	0.12	0.266	1.00	U	SR	-0.028	0.13	0.270	U	-		0.6
Americium 241	-0.051	0.067	0.161	1.00	U	AM	0.138	0.15	0.212	U	-		2.3
Thorium 228	0.022	0.072	0.128	1.00	U	TH	0.015	0.073	0.129	U	-		0.1
Thorium 230	-0.050	0.12	0.233	1.00	U	TH	0.072	0.13	0.232	U	-		1.4
Thorium 232	-0.014	0.014	0.055	1.00	U	TH	0	0.043	0.080	U	-		0.6
Uranium 233/234	0.038	0.076	0.289	1.00	U	U	0.042	0.085	0.323	U	-		0.1
Uranium 235	0.091	0.092	0.350	1.00	U	U	0	0.10	0.391	U	-		1.3
Uranium 238	0	0.075	0.289	1.00	U	U	0.084	0.085	0.323	U	-		1.5
Plutonium 238	-0.027	0.055	0.209	1.00	U	PU	0.047	0.047	0.181	U	-		2.0
Plutonium 239/240	0.027	0.055	0.209	1.00	U	PU	0.378	0.19	0.181		173	148	3.5
Potassium 40	U		1.37		U	GAM	U		0.308	U	-		1.5
Cobalt 60	U		0.045	0.050	U	GAM	U		0.033	U	-		0.4
Cesium 137	U		0.045	0.050	U	GAM	U		0.028	U	-		0.6
Radium 226	U		0.110	0.100	U	GAM	U		0.057	U	-		0.9
Radium 228	U		0.222	0.200	U	GAM	U		0.118	U	-		0.8
Europium 152	U		0.137	0.100	U	GAM	U		0.072	U	-		0.8
Europium 154	U		0.146	0.100	U	GAM	U		0.092	U	-		0.6
Europium 155	U		0.099	0.100	U	GAM	U		0.055	U	-		0.8
Thorium 228	U		0.079		U	GAM	U		0.086	U	-		0.1
Thorium 232	U		0.222		U	GAM	U		0.118	U	-		0.8
Uranium 235	U		0.185		U	GAM	U		0.098	U	-		0.8
Uranium 238	U		5.56		U	GAM	U		3.30	U	-		0.7
Americium 241	U		0.100		U	GAM	U		0.030	U	-		1.3

618-7 Burial Ground - Other Liquids

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-005 J177M9-B

DUPLICATE, cont.

SDG	7865			Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808085-05	Lab sample id	R808085-02	Client sample id	J177M9-B
Dept sample id	7865-005	Dept sample id	7865-002	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
		Received	08/12/08	Collected/Volume	08/06/08 08:55 475 mL
				Custody/SAF No	RC-088-057 RC-088

QC-DUP#2 66840

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-001 J177M8-B

DATA SHEET

SDG	7865	Client/Case no	Hanford	SDG K1293	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808085-01	Client sample id	J177M8-B		
Dept sample id	7865-001	Location/Matrix	618-7 Burial Grnd(drums)	LIQUID	
Received	08/12/08	Collected/Volume	08/06/08 08:40	510 mL	
		Custody/SAF No	RC-088-057	RC-088	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.594	0.72	2.20	10.0	U	93A
Gross Beta	12587-47-2	-0.009	3.0	5.27	15.0	U	93B
Total Strontium	SR-RAD	0.035	0.14	0.270	1.00	U	SR
Americium 241	14596-10-2	0.056	0.11	0.214	1.00	U	AM
Thorium 228	14274-82-9	-0.007	0.11	0.212	1.00	U	TH
Thorium 230	14269-63-7	-0.120	0.099	0.228	1.00	U	TH
Thorium 232	TH-232	-0.035	0.028	0.078	1.00	U	TH
Uranium 233/234	U-233/234	0.032	0.065	0.247	1.00	U	U
Uranium 235	15117-96-1	0	0.078	0.299	1.00	U	U
Uranium 238	U-238	0.032	0.065	0.247	1.00	U	U
Plutonium 238	13981-16-3	-0.125	0.75	0.168	1.00	U	PU
Plutonium 239/240	PU-239/240	0.012	0.025	0.096	1.00	U	PU
Potassium 40	13966-00-2	U		1.97		U	GAM
Cobalt 60	10198-40-0	U		0.065	0.050	U	GAM
Cesium 137	10045-97-3	U		0.064	0.050	U	GAM
Radium 226	13982-63-3	U		0.160	0.100	U	GAM
Radium 228	15262-20-1	U		0.328	0.200	U	GAM
Europium 152	14683-23-9	U		0.190	0.100	U	GAM
Europium 154	15585-10-1	U		0.220	0.100	U	GAM
Europium 155	14391-16-3	U		0.143	0.100	U	GAM
Thorium 228	14274-82-9	U		0.112		U	GAM
Thorium 232	TH-232	U		0.328		U	GAM
Uranium 235	15117-96-1	U		0.292		U	GAM
Uranium 238	U-238	U		7.89		U	GAM
Americium 241	14596-10-2	U		0.055		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	08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

7865-002 J177M9-B

DATA SHEET

SDG	7865	Client/Case no	Hanford SDG K1293
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R808085-02	Client sample id	J177M9-B
Dept sample id	7865-002	Location/Matrix	618-7 Burial Grnd(drums) LIQUID
Received	08/12/08	Collected/Volume	08/06/08 08:55 475 mL
		Custody/SAF No	RC-088-057 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.218	1.2	2.35	10.0	U	93A
Gross Beta	12587-47-2	0.585	3.7	6.31	15.0	U	93B
Total Strontium	SR-RAD	-0.028	0.13	0.270	1.00	U	SR
Americium 241	14596-10-2	0.138	0.15	0.212	1.00	U	AM
Thorium 228	14274-82-9	0.015	0.073	0.129	1.00	U	TH
Thorium 230	14269-63-7	0.072	0.13	0.232	1.00	U	TH
Thorium 232	TH-232	0	0.043	0.080	1.00	U	TH
Uranium 233/234	U-233/234	0.042	0.085	0.323	1.00	U	U
Uranium 235	15117-96-1	0	0.10	0.391	1.00	U	U
Uranium 238	U-238	0.084	0.085	0.323	1.00	U	U
Plutonium 238	13981-16-3	0.047	0.047	0.181	1.00	U	PU
Plutonium 239/240	PU-239/240	0.378	0.19	0.181	1.00		PU
Potassium 40	13966-00-2	U		0.308		U	GAM
Cobalt 60	10198-40-0	U		0.033	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.050	U	GAM
Radium 226	13982-63-3	U		0.057	0.100	U	GAM
Radium 228	15262-20-1	U		0.118	0.200	U	GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.092	0.100	U	GAM
Europium 155	14391-16-3	U		0.055	0.100	U	GAM
Thorium 228	14274-82-9	U		0.086		U	GAM
Thorium 232	TH-232	U		0.118		U	GAM
Uranium 235	15117-96-1	U		0.098		U	GAM
Uranium 238	U-238	U		3.30		U	GAM
Americium 241	14596-10-2	U		0.030		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	08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test AM Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
reparation batch 6160-071					
308085-01			7865-001	J177M8-B	U
308085-02			7865-002	J177M9-B	U
308085-03			7865-003	Lab Control Sample	ok
308085-04			7865-004	Method Blank	U
308085-05			7865-005	Duplicate (R808085-02)	- 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 6160-071			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 010													
308085-01			J177M8-B	0.214	0.485			80		129			12	08/15/08	08/18	SS-031
308085-02			J177M9-B	0.212	0.476			82		244			11	08/15/08	08/17	SS-035
308085-03			Lab Control Sample	0.274	0.400			65		244				08/15/08	08/17	SS-036
308085-04			Method Blank	0.342	0.400			73		128				08/15/08	08/18	SS-032
308085-05			Duplicate (R808085-02)	0.161	0.476			79		244			11	08/15/08	08/17	SS-040
ominal values and limits from method				1.00	0.400			20-105		50	100		180			

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 FOR 5 SAMPLES
MDA 0.241 ± 0.139
YIELD 76 ± 14

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test PU Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240
reparation batch 6160-071						
808085-01			7865-001	J177M8-B	U	U
808085-02			7865-002	J177M9-B	U	0.378
808085-03			7865-003	Lab Control Sample	ok	ok
808085-04			7865-004	Method Blank	U	U
808085-05			7865-005	Duplicate (R808085-02)	- U	OUT U
ominal values and limits from method				RDLs (pCi/mL)	1.00	1.00
18-7 Burial Ground - Other Liquids						

IETHOD 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 6160-071			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 010												
808085-01			J177M8-B	0.168	0.485			73		245			11	08/17/08	08/17	SS-062
808085-02			J177M9-B	0.181	0.476			78		123			13	08/17/08	08/19	SS-051
808085-03			Lab Control Sample	0.178	0.400			46		242				08/17/08	08/17	SS-052
808085-04			Method Blank	0.120	0.400			45		242				08/17/08	08/17	SS-053
808085-05			Duplicate (R808085-02)	0.209	0.476			75		123			13	08/17/08	08/19	SS-052
ominal values and limits from method				1.00	0.400			20-105		50			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.171 ± 0.065
YIELD 63 ± 33

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test TH Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
reparation batch 6160-071					
308085-01			7865-001	J177M8-B	U
308085-02			7865-002	J177M9-B	U
308085-03			7865-003	Lab Control Sample	ok
308085-04			7865-004	Method Blank	U
308085-05			7865-005	Duplicate (R808085-02)	- U

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

IETHOD 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 6160-071			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 010													
308085-01			J177M8-B	0.228	0.243			100		697			11	08/15/08	08/17	SS-035
308085-02			J177M9-B	0.232	0.238			98		698			11	08/15/08	08/17	SS-037
308085-03			Lab Control Sample	0.252	0.200			96		698				08/15/08	08/17	SS-040
308085-04			Method Blank	0.279	0.200			93		698				08/15/08	08/17	SS-042
308085-05			Duplicate (R808085-02)	0.233	0.238			94		694			11	08/15/08	08/17	SS-063
ominal values and limits from method				1.00	0.200			20-110		100	100		180			

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 FOR 5 SAMPLES
MDA 0.245 ± 0.043
YIELD 96 ± 6

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test U Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

: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 6160-071											
308085-01			7865-001	J177M8-B	U	U	U				
308085-02			7865-002	J177M9-B	U	U	U				
308085-03			7865-003	Lab Control Sample	ok	ok	ok				
308085-04			7865-004	Method Blank	U	U	U				
308085-05			7865-005	Duplicate (R808085-02)	- U	- U	- U				
ominal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
18-7 Burial Ground - Other Liquids								Averages			

IETHOD 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 6160-071			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 010												
308085-01			J177M8-B	0.299	0.485			75		100			9	08/14/08	08/15	SS-033
308085-02			J177M9-B	0.391	0.476			71		101			9	08/14/08	08/15	SS-034
308085-03			Lab Control Sample	0.944	0.400			82		192				08/14/08	08/15	SS-052
308085-04			Method Blank	0.182	0.400			77		192				08/14/08	08/15	SS-053
308085-05			Duplicate (R808085-02)	0.350	0.476			78		100			9	08/14/08	08/15	SS-031
ominal values and limits from method				1.00	0.400					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.433 ± 0.592
YIELD 77 ± 8

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test SR Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
reparation batch 6160-071						
808085-01			7865-001	J177M8-B	U	
808085-02			7865-002	J177M9-B	U	
808085-03			7865-003	Lab Control Sample	ok	
808085-04			7865-004	Method Blank	U	
808085-05			7865-005	Duplicate (R808085-02)	-	U
ominal values and limits from method				RDLs (pCi/mL)	1.00	
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	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-071			2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 010													
808085-01			J177M8-B	0.270	0.971			96		100			9	08/15/08	08/15	GRB-225
808085-02			J177M9-B	0.270	0.952			95		100			9	08/15/08	08/15	GRB-227
808085-03			Lab Control Sample	0.271	0.900			94		100				08/15/08	08/15	GRB-228
808085-04			Method Blank	0.342	0.900			94		100				08/15/08	08/15	GRB-227
808085-05			Duplicate (R808085-02)	0.266	0.952			96		100			9	08/15/08	08/15	GRB-207
ominal values and limits from method				1.00	0.900					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES				
	MDA	0.284	±	0.065
	YIELD	95	±	2

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test 93A Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
reparation batch 6160-071					
308085-01	93		7865-001	J177M8-B	U
308085-02	93		7865-002	J177M9-B	U
308085-03	93		7865-003	Lab Control Sample	ok
308085-04	93		7865-004	Method Blank	U
308085-05	93		7865-005	Duplicate (R808085-02)	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 6160-071 2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 010																
808085-01	93		J177M8-B	2.20	0.0970			0		100			9	08/14/08	08/15	GRB-109
808085-02	93		J177M9-B	2.35	0.0950			0		100			9	08/14/08	08/15	GRB-110
808085-03	93		Lab Control Sample	5.64	0.0900			60		100				08/14/08	08/15	GRB-111
308085-04	93		Method Blank	7.17	0.0900			60		100				08/14/08	08/15	GRB-112
808085-05	93		Duplicate (R808085-02)	3.22	0.0950			0		100			9	08/14/08	08/15	GRB-115
ominal values and limits from method				10.0	0.0900			5-250		100			180			

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 FOR 5 SAMPLES
MDA 4.12 ± 4.39
RESIDUE 24 ± 66

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test 93B Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
reparation batch 6160-071						
808085-01	93		7865-001	J177M8-B	U	
808085-02	93		7865-002	J177M9-B	U	
808085-03	93		7865-003	Lab Control Sample	ok	
808085-04	93		7865-004	Method Blank	U	
808085-05	93		7865-005	Duplicate (R808085-02)	-	U

ominal values and limits from method RDLs (pCi/mL) 15.0
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 6160-071			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 010													
808085-01	93		J177M8-B	5.27	0.0970			0		100			9	08/14/08	08/15	GRB-109
808085-02	93		J177M9-B	6.31	0.0950			0		100			9	08/14/08	08/15	GRB-110
808085-03	93		Lab Control Sample	6.00	0.0900			60		100				08/14/08	08/15	GRB-111
808085-04	93		Method Blank	6.22	0.0900			60		100				08/14/08	08/15	GRB-112
808085-05	93		Duplicate (R808085-02)	6.00	0.0950			0		100			9	08/14/08	08/15	GRB-115
ominal values and limits from method				15.0	0.0900			5-250		100			180			

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 FOR 5 SAMPLES
MDA 5.96 ± 0.818
RESIDUE 24 ± 66

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1293

Test GAM Matrix LIQUID
SDG 7865
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1293

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6160-071								
308085-01			7865-001	J177M8-B	U		U	
308085-02			7865-002	J177M9-B	U		U	
308085-03			7865-003	Lab Control Sample	ok		ok	
308085-04			7865-004	Method Blank	U		U	
308085-05			7865-005	Duplicate (R808085-02)	-	U	-	U
ominal values and limits from method				RDLs (pCi/mL)	0.050		0.050	
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 6160-071			2σ prep error 7.0 % Reference Lab Notebook #6160, pg. 010													
308085-01			J177M8-B	0.065	100					895			8	08/14/08	08/14	JR,06,00
308085-02			J177M9-B	0.033	100					1003			8	08/14/08	08/14	JR,07,00
308085-03			Lab Control Sample	0.068	100					1003				08/14/08	08/14	JR,08,00
308085-04			Method Blank	0.024	100					1001				08/14/08	08/15	JR,02,00
308085-05			Duplicate (R808085-02)	0.045	100					1001			9	08/14/08	08/15	JR,04,00
ominal values and limits from method				0.050	100					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.047 ± 0.039
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
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Version 3.06
Report date 08/20/08

SDG 7865
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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).

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
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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.

SDG 7865
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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
Version 3.06
Report date 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

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
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Report date 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

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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Protocol Hanford1
Version Ver 1.0
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Version 3.06
Report date 08/20/08

DUPLICATE

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

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

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

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

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

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1293

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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SDG 7865
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

MATRIX SPIKE

for the recovery.

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

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

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Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/20/08

SDG 7865
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1293

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
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METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-057	Page 1 of 1

Collector: B. Lawrence / E. Harries / DeBuigne / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9F	Data Turnaround: 15 Days 7 JRD 8-6-08		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums) K1293 (7865)	SAF No.: RC-088	
Ice Chest No.: GWS-00~~8~~ 2 MA 8/11/08	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080326		Bill of Lading/Air Bill No.: See ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	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.					RLF#	Drum#
Sample No. / Matrix * / Sample Date / Sample Time											
J177M8 – B / OTHER LIQUID / 8/6/08 / 0840		8/6/08			X					J177K8	5142
J177M9 – B / OTHER LIQUID / 8/6/08 / 0855	JRD				X					J177K9	5207
~~J177N0 / OTHER LIQUID~~											
~~J177N1 / OTHER LIQUID~~ JRD 8-6-08											

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Whitney Sexsmith	1100 8/6/08	JRDeBuigne	JRD 8/6/08 ~~1100~~ 8/6/08
JRDeBuigne	1330 8/6/08	1060 1A	1330 8/6/08
1060/1A	0845 AUG 11 2008	MSTankovich	0845 AUG 11 2008
MSTankovich	0845 AUG 11 2008	Fed Ex	
Fed Ex			08/12/08 09:00

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

NC

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

EBERLINE

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 08/12/08 09:00 CoC No. RC-088-057

Container I.D. No. GWS-002 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 2 Sample Matrix X SOLID, LIQUID

7. Number of containers per sample: 1 (Or see CoC _____)

8. Samples are in correct container Yes [X] No [ ]

9. Paperwork agrees with samples? Yes [ ] No [X] SEE NOTE

10 Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]

11 Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]

12. Samples are Preserved [ ] Not preserved [X] pH _____ Preservative _____

13. Describe any anomalies:
ACTUAL MATRIX IS COMBINATION OF LIQUID AND SOLID

14. Was P M notified of any anomalies? Yes [ ] No [ ] Date _____

15. Inspected by [signature] Date: 08/12/08 Time: 10:00

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

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 10042 Calibration date 10 JUL 08

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

RECEIVED
AUG 2008

29 August 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 #	0808L046
SDG #	K1293
SAF #	RC-088
Date Received	8/12/08
# Samples	4
Matrix	OTHER
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:\[illegible]\orlette\tnu-hanford\data\b_ltrs.doc

LIONVILLE LABORATORY INC.

RECEIVED
AUG 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M8-B	001	OI	08LE0389	08/06/08	08/15/08	08/15/08
J177M8-B	001 MS	OI	08LE0389	08/06/08	08/15/08	08/15/08
J177M8-B	001 MSD	OI	08LE0389	08/06/08	08/15/08	08/15/08
J177M9-B	002	OI	08LE0389	08/06/08	08/15/08	08/15/08

LAB QC:

SBLKWZ	MB1	S	08LE0389	N/A	08/15/08	08/15/08
SBLKWZ	MB1 BS	S	08LE0389	N/A	08/15/08	08/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0808L046
SDG/SAF # K1293/RC-088

W.O. #: 60049-001-001-0001-00
Date Received: 08-12-2008

SEMIVOLATILE

Two (2) oil samples were collected on 08-06-2008.

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 08-15-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-15-2008.

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. The samples were extracted and analyzed within holding times.

3. Non-target compounds were not detected in these samples.

4. Fourteen (14) of thirty-six (36) surrogate recoveries were outside acceptance criteria. The surrogate criteria were not met for the following samples: J177M8-B, MS, 08LE0389-MB1.

5. Twenty (20) of one hundred twenty eight (128) matrix spike recoveries were outside acceptance criteria. The target compounds were included in the spiking solution. (Spike recoveries have been reported to indicate extracts were spiked but these recoveries have minimal impact on the data.)

6. Two (2) of sixty-four (64) blank spike recoveries were outside acceptance criteria. The target compounds were included in the spiking solution. (Spike recoveries have been reported to indicate extracts were spiked but these recoveries have minimal impact on the data.)

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

r:\group\data\2008\bna\tnu\0808-046coi2.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 12 pages.

LIONVILLE LABORATORY INC.

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

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

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

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

8/28/08
Date

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:	J177M8-B	J177M8-B	J177M8-B	J177M9-B	SBLKWZ	SBLKWZ BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	08LE0389-MB1	08LE0389-MB1
	Matrix:	OIL	OIL	OIL	OIL	SOIL	SOIL
	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	129 * %	110 %	103 %	111 %	115 %	109 %
	2-Fluorobiphenyl	145 * %	132 * %	130 * %	118 * %	131 * %	118 * %
	Terphenyl-d14	147 * %	139 * %	135 %	123 %	128 %	129 %
	Phenol-d5	124 * %	107 %	106 %	107 %	114 * %	92 %
	2-Fluorophenol	139 * %	108 %	98 %	117 %	128 * %	100 %
	2,4,6-Tribromophenol	132 * %	122 %	116 %	112 %	119 %	117 %
Phenol		210000 U	93 %	97 %	210000 U	210000 U	81 %
bis(2-Chloroethyl)ether		210000 U	106 %	108 %	210000 U	210000 U	97 %
2-Chlorophenol		210000 U	100 %	102 %	210000 U	210000 U	86 %
1,3-Dichlorobenzene		210000 U	116 * %	118 * %	210000 U	210000 U	110 %
1,4-Dichlorobenzene		210000 U	109 %	113 %	210000 U	210000 U	106 %
1,2-Dichlorobenzene		210000 U	123 * %	127 * %	210000 U	210000 U	116 * %
2-Methylphenol		210000 U	105 %	107 %	210000 U	210000 U	89 %
2,2'-oxybis(1-Chloropropane)		210000 U	116 %	116 %	210000 U	210000 U	109 %
3/4 Methylphenol		210000 U	85 %	95 %	210000 U	210000 U	75 %
N-Nitroso-di-n-propylamine		210000 U	112 %	109 %	210000 U	210000 U	102 %
Hexachloroethane		210000 U	109 %	110 %	210000 U	210000 U	104 %
Nitrobenzene		210000 U	97 %	100 %	210000 U	210000 U	101 %
Isophorone		210000 U	99 %	101 %	210000 U	210000 U	98 %
2-Nitrophenol		210000 U	102 %	101 %	210000 U	210000 U	104 %
2,4-Dimethylphenol		210000 U	103 %	99 %	210000 U	210000 U	113 %
bis(2-Chloroethoxy)methane		210000 U	106 %	104 %	210000 U	210000 U	108 %
2,4-Dichlorophenol		210000 U	87 %	98 %	210000 U	210000 U	101 %
1,2,4-Trichlorobenzene		210000 U	105 %	109 %	210000 U	210000 U	107 %
Naphthalene		210000 U	111 %	111 %	210000 U	210000 U	110 %
4-Chloroaniline		210000 U	100 %	99 %	210000 U	210000 U	97 %
Hexachlorobutadiene		210000 U	121 %	124 %	210000 U	210000 U	116 %
4-Chloro-3-methylphenol		210000 U	99 %	93 %	210000 U	210000 U	101 %
2-Methylnaphthalene		210000 U	112 * %	113 * %	210000 U	210000 U	111 * %
Hexachlorocyclopentadiene		210000 U	108 * %	103 * %	210000 U	210000 U	96 %
2,4,6-Trichlorophenol		210000 U	120 %	118 %	210000 U	210000 U	102 %
2,4,5-Trichlorophenol		520000 U	120 %	117 %	520000 U	520000 U	91 %

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J177M8-B		J177M8-B		J177M8-B		J177M9-B		SBLKWZ		SBLKWZ BS	
RFW#:	001		001 MS		001 MSD		002		08LE0389-MB1		08LE0389-MB1	
2-Chloronaphthalene	210000	U	120	%	122	%	210000	U	210000	U	109	%
2-Nitroaniline	520000	U	114	%	117	%	520000	U	520000	U	106	%
Dimethylphthalate	210000	U	120	%	121	%	210000	U	210000	U	109	%
Acenaphthylene	210000	U	121	%	123	%	210000	U	210000	U	109	%
2,6-Dinitrotoluene	210000	U	116 *	%	123 *	%	210000	U	210000	U	104	%
3-Nitroaniline	520000	U	132	%	133	%	520000	U	520000	U	121	%
Acenaphthene	210000	U	123	%	128	%	210000	U	210000	U	115	%
2,4-Dinitrophenol	520000	U	95	%	105	%	520000	U	520000	U	80	%
4-Nitrophenol	520000	U	106	%	112	%	520000	U	520000	U	112	%
Dibenzofuran	210000	U	129	%	131 *	%	210000	U	210000	U	116	%
2,4-Dinitrotoluene	210000	U	134 *	%	134 *	%	210000	U	210000	U	122	%
Diethylphthalate	210000	U	123	%	128	%	210000	U	210000	U	112	%
4-Chlorophenyl-phenylether	210000	U	118	%	118	%	210000	U	210000	U	114	%
Fluorene	210000	U	132 *	%	137 *	%	210000	U	210000	U	121	%
4-Nitroaniline	520000	U	115	%	128 *	%	520000	U	520000	U	112	%
4,6-Dinitro-2-methylphenol	520000	U	108	%	110	%	520000	U	520000	U	93	%
N-Nitrosodiphenylamine (1)	210000	U	103	%	104	%	210000	U	210000	U	95	%
4-Bromophenyl-phenylether	210000	U	108	%	110	%	210000	U	210000	U	101	%
Hexachlorobenzene	210000	U	114	%	123	%	210000	U	210000	U	111	%
Pentachlorophenol	520000	U	144 *	%	142 *	%	520000	U	520000	U	120	%
Phenanthrene	210000	U	128	%	129	%	210000	U	210000	U	121	%
Anthracene	210000	U	124	%	127	%	210000	U	210000	U	120	%
Carbazole	210000	U	118	%	118	%	210000	U	210000	U	117	%
Di-n-butylphthalate	210000	U	128	%	127	%	210000	U	210000	U	125	%
Fluoranthene	210000	U	133 *	%	133 *	%	210000	U	210000	U	129	%
Pyrene	210000	U	120	%	116	%	210000	U	210000	U	110	%
Butylbenzylphthalate	210000	U	126	%	129	%	210000	U	210000	U	121	%
3,3'-Dichlorobenzidine	210000	U	112	%	106	%	210000	U	210000	U	113	%
Benzo(a)anthracene	210000	U	124	%	124	%	210000	U	210000	U	119	%
Chrysene	210000	U	127	%	123	%	210000	U	210000	U	118	%
bis(2-Ethylhexyl)phthalate	210000	U	117	%	119	%	210000	U	210000	U	112	%
Di-n-octyl phthalate	210000	U	111	%	113	%	210000	U	210000	U	106	%
Benzo(b)fluoranthene	210000	U	124	%	124	%	210000	U	210000	U	109	%
Benzo(k)fluoranthene	210000	U	122	%	122	%	210000	U	210000	U	114	%
Benzo(a)pyrene	210000	U	122	%	120	%	210000	U	210000	U	112	%
Indeno(1,2,3-cd)pyrene	210000	U	126	%	119	%	210000	U	210000	U	118	%
Dibenz(a,h)anthracene	210000	U	127	%	124	%	210000	U	210000	U	120	%
Benzo(g,h,i)perylene	210000	U	130	%	125	%	210000	U	210000	U	123	%

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

Lionville Laboratory Use Only

08081046

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD

Client Washington Closure Hanford SAFF RC-088

Est. Final Proj. Sampling Date

Project# 60049-001-001-0001-00

Project Contact/Phone#

Lionville Laboratory Project Manager O. JOHNSON

C: SW846 Del: STD TAT 7 Day

Date Rec'd 8-12-08 Date Due 8-19-08

Refrigerator #			2																
#/Type Container	Liquid / Solid		TG																
Volume			250																
Preservatives																			
ANALYSES REQUESTED			ORGANIC								INORG								
			VOA	BNA	Pest/PCB	Herb					TCP Metal Hg	CN							
			Lionville Laboratory Use Only																
				062514	OPCB						Met①		II6N						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
S- Soil, E- Sediment, D- Solid, L- Sludge, W- Water, O- Oil, A- Air, DS- Drum Solids, DL- Drum Liquids, EP/TCLP Leachate, W- Wipe, O- Other, F- Fish					OIL															
	001	J177M8-B			SO	8-6-08	0840		X	X				8-13-08 WK	X		X			
	002	1 9-B			1	1	0855		X	X					X		X			
	003	1 8-A			SO	1									X					
	004	1 9-A			1	1									X					

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

8-13-08 1. per Client Change Matrix on 001-002 TO OIL, cancel metals-001-002

1 2. Add 003-004-Solid for Metals only

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/14/08	0945

Relinquished by	Received by	Date	Time

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

000000009

nville Laboratory Use Only

8081046

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD

AB 10-8-08

nt Washington Closure Hanford SAFHL RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

ville Laboratory Project Manager O. Johnson

SW846 Del STD TAT 7 Day

Rec'd 8-12-08 Date Due 8-19-08

Refrigerator #		2											
#/Type Container	Liquid / Solid	1G											
Volume		250											
Preservatives													

ANALYSES REQUESTED →

	ORGANIC							INORG						
	VOA	BNA	~~Pest/~~ PCB	Herb				~~TCP~~ Metal	~~Hg~~	CN	~~Cyanide~~			
Lionville Laboratory Use Only		062514	OPCB					Met①			II6N			

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	J177M8			SO	8-6-08	0840		X	X					X		X		
002	1 9			1	1	0855		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

met① = HSL + Sn, Zr

Special Instructions:

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

linquished by	Received by	Date	Time
		8/14/08	0945

Relinquished by	Received by	Date	Time

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

0100000000

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-057	Page 1 of 1

ector Lawrence / E. Harries / DeBrigne / W. SEASMITH	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
ect Designation 8-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
hest No. ERC-99-056	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
ped To BERLINE SERVICES JACKSONVILLE	Offsite Property No. A080312		Bill of Lading/Air Bill No. See ASPC

Price Code	Data Turnaround
9F	~~15~~ 7 Days SPD 8-6-08

SIBLE SAMPLE HAZARDS/REMARKS

ntial Radioactive contamination, potential beryllium amination

cial Handling and/or Storage

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.					

JRD 7-10-08

JRD 8-6-08

Sample No.	Matrix *	Sample Date	Sample Time									RCF#	DRUM#
48	OTHER LIQUID	8/6/08	0840	X	X	X	X					J177K8	5142
49	OTHER LIQUID	8/6/08	0855	X	X	X	X					J177K9	5207
~~0~~	~~OTHER LIQUID~~	JRD 8-6-08											
~~1~~	~~OTHER LIQUID~~												

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ey Seasmith	1100 8/6/08	JR DeBrigne JR DeBrigne	1100 8/6/08
hed By/Removed From eBrigne	Date/Time 1330 8/6/08	Received By/Stored In 1060 1A	Date/Time 1330 8/6/08
hed By/Removed From 2/1A	Date/Time 0830 AUG 1 1 2008	Received By/Stored In MSHankouch	Date/Time 0830 AUG 1 1 2008
hed By/Removed From MSHankouch	Date/Time 0830 AUG 1 1 2008	Received By/Stored In Fed Ex	Date/Time
ed By/Removed From	Date/Time 8-2-08 0945	Received By/Stored In	Date/Time 8-2-08 0945
ed 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

RATORY TION	Received By	Title	Date/Time
SAMPLE SITION	Disposal Method	Disposed By	Date/Time

E-011

000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/12/08

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

LvLI Batch #: 0808L046 Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7919 3908 5626
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # ERC-99-056
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
AUG 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M8-B	001	OI	08LE0390	08/06/08	08/15/08	08/18/08
J177M8-B	001 MS	OI	08LE0390	08/06/08	08/15/08	08/18/08
J177M8-B	001 MSD	OI	08LE0390	08/06/08	08/15/08	08/18/08
J177M9-B	002	OI	08LE0390	08/06/08	08/15/08	08/18/08

LAB QC:

PBLKTO	MB1	S	08LE0390	N/A	08/15/08	08/15/08
PBLKTO	MB1 BS	S	08LE0390	N/A	08/15/08	08/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0808L046
SDG/SAF # K1293 / RC-088

W.O. #: 60049-001-001-0001-00
Date Received: 08-12-2008

PCB

Two (2) solid samples were collected on 08-06-2008.

The samples and their associated QC samples were extracted on 08-15-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 08-15,18-2008. The extraction procedure was based on method 3580A (waste dilution – 1g into {10/100} mLs Hexane) and the extracts were analyzed based on method 8082.

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

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

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

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

4. Three (3) of twelve (12) surrogate recoveries were outside acceptance criteria. However, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).

5. All blank spike recoveries were within acceptance criteria.

6. All matrix spike recoveries were within acceptance criteria.

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

r:\group\data\2008\pest\tnu\0808-046csol2.pcb.doc

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

LIONVILLE LABORATORY INC.

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

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

8-21-8
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory Use Only

08081046

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD

Client: Washington Closure Hanford SAPH: RC-008

Est. Final Proj. Sampling Date

Project#: 60049-001-001-0001-00

Project Contact/Phone#

Lionville Laboratory Project Manager: O. JOHNSON

PC: SW846 Del: STD TAT: 7 Day

Date Rec'd: 8-12-08 Date Due: 8-19-08

Refrigerator #		2
#/Type Container	Liquid / Solid	TG
Volume		250
Preservatives		

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA (ORGANIC)	~~Pest~~/PCB (ORGANIC)	Herb (ORGANIC)					Metal (INORG)	Hg (INORG)	CN (INORG)	Cyanide				
								8625H	8PCB						Met①			II6N				
001	J177M8-B			SO	8-6-08	0840		X	X					8-13-08	X			X				
002	1 9-B			1	1	0855		X	X						X			X				
003	1 8-A			SO	1										X							
004	1 9-A			1	1										X							

Lionville Laboratory Use Only

MATRIX CODES:
- S- Soil
- SE- Sediment
- SO- Solid
- SL- Sludge
- W- Water
- O- Oil
- A- Air
- DS- Drum Solids
- DL- Drum Liquids
- EP- EP/TCLP Leachate
- WI- Wipe
- O- Other
- F- Fish

Special Instructions: Run matrix QC

Met① = HSL + Sn, Zr

Special Instructions:

1. 8-13-08 per Client Change Matrix on 001-002 TO OIL, cancel metals-001-002
2. 1 Add 003-004-Solid for Metals only
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	8/14/08	0945

Relinquished by	Received by	Date	Time

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

00000005

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-057

ector . Lawrence / E. Harries / DeBrigne / W. SERSMITH	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9F	Data Turnaround ~~15~~ 7 Days JRD 9-6-08		
ect Designation 8-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. ERC-99-056	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
ned To BERLINE SERVICES KIONVILLE	Offsite Property No. A080312		Bill of Lading/Air Bill No. See ospc

SSIBLE SAMPLE HAZARDS/REMARKS

ntial Radioactive contamination, potential beryllium amination

cial Handling and/or Storage

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
		JRD 7-10-08									
No. of Container(s)	1	~~1~~ 0	~~1~~ 0	~~1~~ 0	1						
Volume	250mL	125mL	125mL	60mL	500mL						

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.				RCP#	Drum#
18	OTHER LIQUID	8/6/08	0840	X	X	X	X	JRD 8-6-08				J177K8	5142
19	OTHER LIQUID	8/6/08	0855	X	X	X	X					J177K9	5207
0	~~OTHER LIQUID~~	JRD 8-6-08											
1	~~OTHER LIQUID~~												

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ey Sersmith	1100 8/6/08	JR DeBrigne JR DeBrigne	1100 8/6/08
ned By/Removed From DeBrigne	Date/Time 1330 8/6/08	Received By/Stored In 1060 1A	Date/Time 1330 8/6/08
ed By/Removed From 1/14	Date/Time 0830 AUG 1 1 2008	Received By/Stored In MS Stankovich	Date/Time 0830 AUG 1 1 2008
ed By/Removed From MS Stankovich	Date/Time 0830 AUG 1 1 2008	Received By/Stored In Fed Ex	Date/Time
ed By/Removed From	Date/Time 8-12-08 0945	Received By/Stored In	Date/Time 8-12-08 0945
ed 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

JC

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

ATORY TION	Received By	Title	Date/Time
SAMPLE SITION	Disposal Method	Disposed By	Date/Time

-011

000000006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/12/08

Project/SAP/SOW/Release #: RC088

LvLI Batch #: 0808L046 Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7919 3908 5626
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # ERC-99-056
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: 08/18/08 14:50

RFW Batch Number: **0808L046** Client: **WC-HANFORD RC-088** Work Order: 60049001001 Page: 1

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	Cust ID:	J177M8-B	J177M8-B	J177M8-B	J177M9-B	PBLKTO	PBLKTO BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	08LE0390-MB1	08LE0390-MB1
	Matrix:	OIL	OIL	OIL	OIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	140 %	150 * %	149 * %	142 * %	124 %	138 %
	Decachlorobiphenyl	110 %	124 %	122 %	112 %	100 %	118 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		400 U	105 %	97 %	400 U	400 U	102 %
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		400 U	400 U	400 U	400 U	400 U	400 U
Aroclor-1260		400 U	100 %	94 %	400 U	400 U	98 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1 waste Dilution

Extract. Date: 08/15/08 Extraction Batch No: 08LE0390 Analyst: MF Method: **** WD3580

Test: OPCB Cleanup Date: 08/15/08 Analyst: MF Client: WC-HANFORD RC-088

LIMS Report Date: 08/15/08 Solvent: HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0808L046-	WC-HANFORD RC-088										
001	J177M8-B		1.0	1.0		10		1.0	N	0.0	10000
001 -S	J177M8-B		1.0	1.0	1.0	10		1.0	N	0.0	10000
001 -T	J177M8-B		1.0	1.0	1.0	10		1.0	N	0.0	10000
002	J177M9-B		1.0	1.0		10		1.0	N	0.0	10000
08LE0390-MB1	PBLKTO		1.0	1.0		10		1.0	N	100.00	10000
08LE0390-MB1 -S	PBLKTO		1.0	1.0	1.0	10		1.0	N	100.00	10000

Comments:
Surrogate: 250 UL OLM PSURR 89916408
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	8/15/08 1325	SZ	8/15/08 1330	GC

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RECEIVED AUG 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M8-A						
SILVER, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
SILVER, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
SILVER, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
ALUMINUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
ALUMINUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
ALUMINUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
ARSENIC, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
ARSENIC, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
ARSENIC, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
BARIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
BARIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
BARIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
BERYLLIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
BERYLLIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
BERYLLIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
CALCIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
CALCIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
CALCIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
CADMIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
CADMIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
CADMIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
COBALT, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
COBALT, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
COBALT, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
CHROMIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
CHROMIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
CHROMIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
COPPER, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
COPPER, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
COPPER, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
IRON, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
IRON, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
IRON, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
MERCURY, TOTAL	003	SO	08C0145	08/06/08	08/18/08	08/19/08
MERCURY, TOTAL	003 REP	SO	08C0145	08/06/08	08/18/08	08/19/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003 MS	SO	08C0145	08/06/08	08/18/08	08/19/08
POTASSIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
POTASSIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
POTASSIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
MAGNESIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
MAGNESIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
MAGNESIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
MANGANESE, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
MANGANESE, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
MANGANESE, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
SODIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
SODIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
SODIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
NICKEL, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
NICKEL, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
NICKEL, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
LEAD, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
LEAD, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
LEAD, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
ANTIMONY, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
ANTIMONY, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
ANTIMONY, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
SELENIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
SELENIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
SELENIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
TIN, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
TIN, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
TIN, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
THALLIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
THALLIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
THALLIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
VANADIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
VANADIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
VANADIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
ZINC, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08
ZINC, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
ZINC, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
ZIRCONIUM, TOTAL	003	SO	08L0306	08/06/08	08/18/08	08/19/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	003 REP	SO	08L0306	08/06/08	08/18/08	08/19/08
ZIRCONIUM, TOTAL	003 MS	SO	08L0306	08/06/08	08/18/08	08/19/08
J177M9-A						
SILVER, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
ALUMINUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
ARSENIC, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
BARIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
BERYLLIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
CALCIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
CADMIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
COBALT, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
CHROMIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
COPPER, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
IRON, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
MERCURY, TOTAL	004	SO	08C0145	08/06/08	08/18/08	08/19/08
POTASSIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
MAGNESIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
MANGANESE, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
SODIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
NICKEL, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
LEAD, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
ANTIMONY, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
SELENIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
TIN, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
THALLIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
VANADIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
ZINC, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08
ZIRCONIUM, TOTAL	004	SO	08L0306	08/06/08	08/18/08	08/19/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
SILVER, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
ALUMINUM LABORTORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
ALUMINUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
ARSENIC LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
BARIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
BARIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
BERYLLIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
CALCIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
CALCIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
CADMIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
CADMIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
COBALT LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
COBALT, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
CHROMIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
CHROMIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
COPPER LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
COPPER, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
IRON LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
IRON, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
MERCURY LABORATORY	LC1 BS	S	08C0145	N/A	08/18/08	08/19/08
MERCURY, TOTAL	MB1	S	08C0145	N/A	08/18/08	08/19/08
POTASSIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
POTASSIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
MAGNESIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
MANGANESE LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
MANGANESE, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
SODIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
SODIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
NICKEL LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
NICKEL, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
LEAD LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
LEAD, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
ANTIMONY LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
ANTIMONY, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
SELENIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
SELENIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
TIN LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
TIN, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
THALLIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
THALLIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
VANADIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
VANADIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
ZINC LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
ZINC, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0306	N/A	08/18/08	08/18/08
ZIRCONIUM, TOTAL	MB1	S	08L0306	N/A	08/18/08	08/18/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088
LVL#: 0808L046
SDG/SAF#: K1293/RC-088

W.O.#: 60049-001-001-0001-00
Date Received: 08-12-08

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 2 solid 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.

   Sample J177M8-A was run and reported with a 6-fold dilution for ICP metals with exception of Aluminum with a 24-fold dilution. Mercury was run and reported with a 5-fold dilution.

   Sample J177M9-A was run and reported with a 3-fold dilution for ICP metals with the exception of Aluminum and Sodium with 6-fold dilutions. Mercury was run and reported with a 5-fold dilution. All dilutions were due to sample matrix and/or high concentration.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV3 and CCV4 for Potassium and Sodium in file TA0818A. The samples were rerun and reported from file TA0819A with the exception of Sodium due to CCVs were out of control. Sodium was reported from file TA0819B for all samples. All data contained within this report is surrounded by in control CCVs.

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

6. The preparation/method blanks for 2 analytes were outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), or samples read greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 21 pages.

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

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

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

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J177M8-A	Silver	600	109.9
	Aluminum	600,000	86.8
	Copper	600	115.1
	Iron	6,000	104.0
	Lead	600	101.1
	Selenium	600	108.2
	Antimony	600	101.9

11. The duplicate analyses for 5 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/or 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.

8/25/08

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

Date

alm/m08-046

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

e following methods are used as reference for the digestion and analysis of samples contained within thi

#: 0808L046

aching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
uminum	✓6010B		__200.7				__99
ntimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	✓6010B		__200.7				__99
eryllium	✓6010B		__200.7				__99
smuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	__6010B		__200.7				__99
admium	✓6010B	__7131A [5]	__200.7	__213.2			__99
alcium	✓6010B		__200.7				__99
hromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	✓6010B		__200.7				__99
opper	✓6010B	__7211 [5]	__200.7	__220.2			__99
on	✓6010B		__200.7				__99
ead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	__6010B	__7430 [4]	__200.7			__1620	__99
lagnesium	✓6010B		__200.7				__99
langanese	✓6010B		__200.7				__99
lercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
lolybdenum	__6010B		__200.7				__99
ickel	✓6010B		__200.7				__99
otassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	__6010B [1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
trontium	__6010B		__200.7				__99
hallium	✓6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
in	✓6010B		__200.7				__99
itanium	__6010B		__200.7				__99
Jranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	✓6010B		__200.7				__99
inc	✓6010B		__200.7				__99
irconium	✓6010B [1]		__200.7 [1]			__1620	__99

Other

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J177M8-A	Silver, Total	0.54	u	MG/KG	0.54	6.0
		Aluminum, Total	697000		MG/KG	85.7	24.0
		Arsenic, Total	2.7	u	MG/KG	2.7	6.0
		Barium, Total	1.9		MG/KG	0.54	6.0
		Beryllium, Total	0.27	u	MG/KG	0.27	6.0
		Calcium, Total	117		MG/KG	21.4	6.0
		Cadmium, Total	0.27	u	MG/KG	0.27	6.0
		Cobalt, Total	1.1	u	MG/KG	1.1	6.0
		Chromium, Total	3.6		MG/KG	1.1	6.0
		Copper, Total	10.8		MG/KG	1.1	6.0
		Iron, Total	518		MG/KG	24.1	6.0
		Mercury, Total	1.6		MG/KG	0.05	5.0
		Potassium, Total	21.4	u	MG/KG	21.4	6.0
		Magnesium, Total	40.3		MG/KG	13.4	6.0
		Manganese, Total	8.3		MG/KG	0.21	6.0
		Sodium, Total	11.2		MG/KG	10.7	6.0
		Nickel, Total	1.9		MG/KG	1.1	6.0
		Lead, Total	24.5		MG/KG	1.6	6.0
		Antimony, Total	1.6	u	MG/KG	1.6	6.0
		Selenium, Total	3.2	u	MG/KG	3.2	6.0
		Tin, Total	3.2	u	MG/KG	3.2	6.0
		Thallium, Total	3.2	u	MG/KG	3.2	6.0
		Vanadium, Total	2.4		MG/KG	0.75	6.0
		Zinc, Total	13.5		MG/KG	3.2	6.0
		Zirconium, Total	26.8	u	MG/KG	26.8	6.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J177M9-A	Silver, Total	0.29	u	MG/KG	0.29	3.0
		Aluminum, Total	438000		MG/KG	23.3	6.0
		Arsenic, Total	1.5		MG/KG	1.5	3.0
		Barium, Total	10.2		MG/KG	0.29	3.0
		Beryllium, Total	0.17		MG/KG	0.15	3.0
		Calcium, Total	2080		MG/KG	11.7	3.0
		Cadmium, Total	0.15	u	MG/KG	0.15	3.0
		Cobalt, Total	1.7		MG/KG	0.58	3.0
		Chromium, Total	8.2		MG/KG	0.58	3.0
		Copper, Total	20.8		MG/KG	0.58	3.0
		Iron, Total	4400		MG/KG	13.1	3.0
		Mercury, Total	0.35		MG/KG	0.05	5.0
		Potassium, Total	178		MG/KG	11.7	3.0
		Magnesium, Total	757		MG/KG	7.3	3.0
		Manganese, Total	46.3		MG/KG	0.12	3.0
		Sodium, Total	86.2		MG/KG	11.7	6.0
		Nickel, Total	3.5		MG/KG	0.58	3.0
		Lead, Total	7.8		MG/KG	0.87	3.0
		Antimony, Total	0.87	u	MG/KG	0.87	3.0
		Selenium, Total	1.7	u	MG/KG	1.7	3.0
		Tin, Total	1.7	u	MG/KG	1.7	3.0
		Thallium, Total	2.0		MG/KG	1.7	3.0
		Vanadium, Total	9.0		MG/KG	0.41	3.0
		Zinc, Total	22.3		MG/KG	1.7	3.0
		Zirconium, Total	14.6	u	MG/KG	14.6	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0306-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	82.9	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	17.5	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.38	MG/KG	0.20	1.0
		Iron, Total	8.6	MG/KG	4.5	1.0
		Potassium, Total	5.7	MG/KG	4.0	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.1	MG/KG	0.04	1.0
		Sodium, Total	15.3	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	0.60 u	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	2.5	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0145-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-003	J177M8-A	Silver, Total	2.8	0.54u	4.5	62.2	6.0
		Aluminum, Total	690000	697000	179	-4000. *	24.0
		Arsenic, Total	150	2.7 u	179	84.0	6.0
		Barium, Total	155	1.9	179	85.7	6.0
		Beryllium, Total	4.0	0.27u	4.5	88.9	6.0
		Calcium, Total	1960	117	2230	82.6	6.0
		Cadmium, Total	3.7	0.27u	4.5	82.2	6.0
		Cobalt, Total	38.1	1.1 u	44.6	85.4	6.0
		Chromium, Total	19.3	3.6	17.9	87.7	6.0
		Copper, Total	26.7	10.8	22.3	71.3	6.0
		Iron, Total	481	518	89.3	-42. *	6.0
		Mercury, Total	2.6	1.6	0.78	133.5	5.0
		Potassium, Total	2310	21.4 u	2230	103.3	6.0
		Magnesium, Total	2050	40.3	2230	90.2	6.0
		Manganese, Total	46.3	8.3	44.6	85.2	6.0
		Sodium, Total	2360	11.2	2230	105.2	6.0
		Nickel, Total	40.1	1.9	44.6	85.7	6.0
		Lead, Total	54.9	24.5	44.6	68.2	6.0
		Antimony, Total	31.4	1.6 u	44.6	70.4	6.0
		Selenium, Total	104	3.2 u	179	58.3	6.0
		Tin, Total	73.5	3.2 u	89.3	82.3	6.0
		Thallium, Total	142	3.2 u	179	79.6	6.0
		Vanadium, Total	40.0	2.4	44.6	84.3	6.0
		Zinc, Total	51.5	13.5	44.6	85.2	6.0
		Zirconium, Total	361	26.8 u	446	80.8	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	J177M8-A	Silver, Total	0.54u	0.52u	NC	6.0
		Aluminum, Total	697000	708000	1.6	24.0
		Arsenic, Total	2.7 u	2.6 u	NC	6.0
		Barium, Total	1.9	1.8	5.4	6.0
		Beryllium, Total	0.27u	0.26u	NC	6.0
		Calcium, Total	117	95.5	20.3	6.0
		Cadmium, Total	0.27u	0.26u	NC	6.0
		Cobalt, Total	1.1 u	1.0 u	NC	6.0
		Chromium, Total	3.6	3.7	2.7	6.0
		Copper, Total	10.8	15.2	33.8	6.0
		Iron, Total	518	483	7.1	6.0
		Mercury, Total	1.6	1.7	4.0	5.0
		Potassium, Total	21.4 u	20.9 u	NC	6.0
		Magnesium, Total	40.3	35.4	12.9	6.0
		Manganese, Total	8.3	8.3	0.00	6.0
		Sodium, Total	11.2	20.3	57.8	6.0
		Nickel, Total	1.9	1.1	53.3	6.0
		Lead, Total	24.5	19.0	25.3	6.0
		Antimony, Total	1.6 u	2.4	NC	6.0
		Selenium, Total	3.2 u	5.9	NC	6.0
		Tin, Total	3.2 u	3.1 u	NC	6.0
		Thallium, Total	3.2 u	3.1 u	NC	6.0
		Vanadium, Total	2.4	2.5	4.1	6.0
		Zinc, Total	13.5	13.0	3.8	6.0
		Zirconium, Total	26.8 u	26.1 u	NC	6.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 08/20/08

CLIENT: WC-HANFORD RC-088 K1293 LVL LOT #: 0808L046

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0306-LC1	Silver, LCS	47.4	50.0	MG/KG	94.8
		Aluminum, LCS	571	500	MG/KG	114.2
		Arsenic, LCS	896	1000	MG/KG	89.6
		Barium, LCS	478	500	MG/KG	95.7
		Beryllium, LCS	22.9	25.0	MG/KG	91.6
		Calcium, LCS	2270	2500	MG/KG	90.7
		Cadmium, LCS	22.3	25.0	MG/KG	89.2
		Cobalt, LCS	228	250	MG/KG	91.1
		Chromium, LCS	46.3	50.0	MG/KG	92.6
		Copper, LCS	132	125	MG/KG	106.0
		Iron, LCS	457	500	MG/KG	91.3
		Potassium, LCS	2200	2500	MG/KG	88.1
		Magnesium, LCS	2250	2500	MG/KG	89.9
		Manganese, LCS	68.6	75.0	MG/KG	91.5
		Sodium, LCS	2260	2500	MG/KG	90.3
		Nickel, LCS	184	200	MG/KG	91.8
		Lead, LCS	227	250	MG/KG	90.7
		Antimony, LCS	269	300	MG/KG	89.5
		Selenium, LCS	885	1000	MG/KG	88.5
		Tin, LCS	450	500	MG/KG	90.0
		Thallium, LCS	920	1000	MG/KG	92.0
		Vanadium, LCS	227	250	MG/KG	90.9
		Zinc, LCS	91.5	100	MG/KG	91.5
		Zirconium, LCS	471	500	MG/KG	94.2
LCS1	08C0145-LC1	Mercury, LCS	4.9	4.7	MG/KG	104.2

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0306
Date/Time Initiated: 08/18/08, 12:30
Date/Time Completed: 08/18/08, 03:00
Analyst(s): PMP
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Backlog

(Digested) / Undigested (circle one)
Balance #: B-20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 92°

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

(TN4)

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
0808L046-003		1.12	100	N/A	TO	Fine	Metal Shavings	NONE	N/A
-003R		1.15							
-003S	1.0 ⊛	1.12							
-004		1.03					(+ Rocks)		
0808L001-001		1.07					Brown soil		
-001R		1.08							
-001S	1.0 ⊛	1.08							
-002		1.14							
0808L033-001		1.15							
-001R		1.16							
-001S	1.0 ⊛	1.15							
08L0306-MB1		1.00					Boiling chips		
-LC1	1.0 ⊛	1.00							

Pmartel
08-18-08

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

Reagent IDs:
HNO_3 G07057
HCL G15040
H_2O_2 G15A18
1:1 HNO_3 9789-81-03
1:1 HCL

File ID#: IC030601
IC030602
LIMS Transfer: (Y) N
Updated
Data Review By/Date: 8/20/08

⊛ Also spiked with 0.5 ml of Bi (6072-076-11) & 0.5 ml of Zr (6072-079-13)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TD
Date 8/18/08
Start Time/Temp: 1550 | 96°
End Time/Temp: 1620 | 95°

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

Prep Batch: 08C0145
Worksheet: HG081901
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.
Bcmk	JS			10mL	50mL	
0.2 µg/L	KX	0.100				
1.0	2T	0.500				
2.0	2V	1.000				
5.0	6J	2.500				
10.0	1771	5.000				
ICV	BG	0.125	2.5			
CCV	F8	0.250	5.0			
ICB/CCB	HH					
MB1	997			0.30		PBW
LC1	55	✱	✱	0.33		
0808L046-003	803			0.32		
003R	J1			0.32		
0035	11A	0.025	5.0	0.32		
004	Z			0.32		

Standard:	ID	Prep Date/Time
ICAL/MS	RI 6072-78-14B	8/18/08 1030
ICV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date [signature] 8/20

see book # 936Y 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

ville Laboratory Use Only

8081046

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD

t Washington Closure Hanford SAMPL RC-088

Final Proj. Sampling Date

ct# 60049-001-001-0001-00

ct Contact/Phone#

ville Laboratory Project Manager O-JOHNSON

SW846 Del ST-O TAT 7 Day

Rec'd 8-12-08 Date Due 8-19-08

Refrigerator #			A														
#/Type Container	Liquid		2 TG														
	Solid																
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	~~Pest/~~ PCB	Herb				TCP Metal Hg	CN						
			Lionville Laboratory Use Only														
				8625H	8PCB					Met①		IIGN					

MX
ES
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	PCB	Herb				Met①	CN	IIGN				
001	J177M8			SO	8-6-08	0840		X	X					X		X				
002	1 9			⊥	⊥	0855		X	X					X		X				

cial Instructions: Run matrixQC

Met① = HSL + Sn, Zr

Special Instructions:

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

Relinquished by	Received by	Date	Time
DE	[signature]	8/12/08	0945

Relinquished by	Received by	Date	Time

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

000000019

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-057	Page 1 of 1

ector Lawrence / E. Harries / DeBuigne / W. SEXSMITH	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
ect Designation 8-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. ERC-99-056	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
ped To BERLINE SERVICES KIONVILLE	Offsite Property No. A080312		Bill of Lading/Air Bill No. See ospc

Price Code: 9F

Data Turnaround: ~~15~~ 7 Days JRD 8-6-08

SSIBLE SAMPLE HAZARDS/REMARKS

ntial Radioactive contamination, potential beryllium amination

cial Handling and/or Storage

?

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.						

JRD 7-10-08

JRD 8-6-08

Sample No.	Matrix *	Sample Date	Sample Time									RCF#	Drum#
48	OTHER LIQUID	8/6/08	0840	X	X	X	X					J177K8	5142
49	OTHER LIQUID	8/6/08	0855	X	X	X	X					J177K9	5207
~~50~~	~~OTHER LIQUID~~												
~~51~~	~~OTHER LIQUID~~												

JRD 8-6-08

CHAIN OF POSSESSION	Sign/Print Names		
ished By/Removed From ey Sexsmith	Date/Time 1100 8/6/08	Received By/Stored In JR DeBuigne	Date/Time 1100 8/6/08
hed By/Removed From DeBuigne	Date/Time 1330 8/6/08	Received By/Stored In 1060 1A	Date/Time 1330 8/6/08
hed By/Removed From 0/1A	Date/Time 0830 AUG 1 1 2008	Received By/Stored In MSHankovich	Date/Time 0830 AUG 1 1 2008
hed By/Removed From MSHankovich	Date/Time 0830 AUG 1 1 2008	Received By/Stored In Fed Ex	Date/Time
ed By/Removed From Fed Ex	Date/Time 8-12-08 0945	Received By/Stored In	Date/Time 8-12-08 0945
ed 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

ATORY TION	Received By	Title	Date/Time
SAMPLE SITION	Disposal Method	Disposed By	Date/Time

E-011

000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford Date: 8/12/08

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

LvLI Batch #: 0808L046 Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7919 3908 5626
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	°C	Cooler # ERC-99-056
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
AUG 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1293

DATE RECEIVED: 08/12/08 LVL LOT # :0808L046

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M8-B						
IGNITABILITY	001	OI	08LFP023	08/06/08	08/19/08	08/19/08
J177M9-B						
IGNITABILITY	002	OI	08LFP023	08/06/08	08/19/08	08/19/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088 K1293
LVL#: 0808L046

W.O.#: 60049-001-001-0001-00
Date Received: 08-12-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 2 liquid samples.

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

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

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

5. The Laboratory Control Sample (LCS) was within the method criteria.

6. The replicate analysis was within the method criteria.

7. 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

8/26/08
Date

njp\i08-046

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 8 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

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 K1293
LVL#: 0808L046

W.O.#: 60049-001-001-0001-00
Date Received: 08-12-08

Analyte:

Ignitability

Observation:

Samples J177M8-B, J177M9-B and J177M9-B duplicate 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\i08-046.pt2

LVLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Use Only

08081046

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD K1293

Client: Washington Closure Hanford SAFE RC-088

Est. Final Proj. Sampling Date

Project# 60049-001-001-0001-00

Project Contact/Phone#

Lionville Laboratory Project Manager: O-JOHNSON

SW846 Del STD TAT 7 Day

Date Rec'd 8-12-08 Date Due 8-19-08

Refrigerator #			2													
#/Type Container	Liquid		TG													
	Solid															
Volume			250													
Preservatives																
ANALYSES REQUESTED			ORGANIC							INORG						
			VOA	BNA	Pest/PCB	Herb				TCP Metal Hg	CN					
				8625H	OPCB					MetO		IIGN				

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
				WC 8-13-08 OIL															
001	J177M8-B			SO	8-6-08	0840		X	X			8-13-08 WC	X		X				
002	1 9-B			1	1	0855		X	X				X		X				
003	1 8-A			SO	1								X						
004	1 9-A			1	1								X						

Special Instructions: Run matrix QC

MetO = HSL + Sn, Zr

Special Instructions:

8-13-08 1. per Client Change Matrix on 001-002 TO OIL, cancel metals -001-002

1 2. Add 003-004 - Solid for Metals only

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
		8/12/08	0945

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-057

ector: Lawrence / E. Harries / DeBuigne / W. SERSMITH	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9F	Data Turnaround: ~~15~~ 7 Days JPD 8-6-08		
ect Designation: 8-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
hest No.: ERC-99-056	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex
oed To: BERLINE SERVICES JACKSONVILLE	Offsite Property No.: A080312		Bill of Lading/Air Bill No.: See ospc

SIBLE SAMPLE HAZARDS/REMARKS

ntial Radioactive contamination, potential beryllium amination

cial Handling and/or Storage

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						RCF#	DRUM#
18	OTHER LIQUID	8/6/08	0840	X	X	X	X		J177K8	5142
19	OTHER LIQUID	8/6/08	0855	X	X	X	X		J177K9	5207
~~0~~	~~OTHER LIQUID~~	JPD 8-6-08								
~~1~~	~~OTHER LIQUID~~									

JPD 8-6-08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ey Sersmith	1100 8/6/08	JP DeBuigne JP DeBuigne	1100 8/6/08
hed By/Removed From: DeBuigne	1330 8/6/08	1060 1A	1330 8/6/08
ed By/Removed From: 1/1A	0830 AUG 1 1 2008	MS Stankovich	0830 AUG 1 1 2008
ed By/Removed From: MS Stankovich	0830 AUG 1 1 2008	Fed Ex	
ed By/Removed From	8-7-08 0945		8-7-08 0945
ed 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

JC

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

ATORY TION	Received By	Title	Date/Time
SAMPLE SITION	Disposal Method	Disposed By	Date/Time

-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: Washington Closure Hanford

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

Date: 8/12/08

LvLI Batch #: 0808L046

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7919 3908 5626
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # ERC-99-056
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.

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