0077958

SAF-RC-042
300 Area D&D Waste Characterization Sampling - Other Liquid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Mike Stankovich H4-21 KW 6/18/08
INITIAL/DATE

COMMENTS:

SDG K1220 SAF-RC-042

Rad only Chem only X Rad & Chem

X Complete Partial

Sample Location/Waste Site: 327 RPS Drums

RECEIVED
JUN 23 2008
EDMC

EBERLINE SERVICES

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

May 29, 2008

RECEIVED
JUN 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-05-098-7816, SDG K1220

Dear Ms. Kessner:

Enclosed is the data report for one liquid (other liquid) sample designated under SAF No. RC-042 received at Eberline Services on May 9, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1220 was composed of one liquid (other liquid) sample designated under SAF No. RC-042 with a Project Designation of: 300 Area D&D Waste Characterization Sampling-Other Liquid.

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 May 28, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha/Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.4 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

5/29/08

Date

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1220

SDG	7816
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG K1220

SUMMARY DATA SECTION

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Prepared by

Melissa Mannion

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/28/08

SDG 7816
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1220

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/28/08

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 K1220

SDG 7816
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1220

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R805098-01	J16VJ9	327-RPS Drums	LIQUID		RC-042	RC-042-036	05/07/08 13:30
R805098-02	Lab Control Sample		LIQUID		RC-042		
R805098-03	Method Blank		LIQUID		RC-042		
R805098-04	Duplicate (R805098-01)	327-RPS Drums	LIQUID		RC-042		05/07/08 13:30

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

SDG 7816
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1220

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
316	RC-042-036	J16VJ9	LIQUID		2500 mL		05/09/08	2	R805098-01	7816-001
		Method Blank	LIQUID						R805098-03	7816-003
		Lab Control Sample	LIQUID						R805098-02	7816-002
		Duplicate (R805098-01)	LIQUID		2500 mL		05/09/08	2	R805098-04	7816-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

SDG 7816
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1220

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
PU	LIQUID	Plutonium-238,239/240, Liquid	6145-133	8.0	1			1	1	1/1		
U	LIQUID	Uranium in Liquid	6145-133	8.0	1			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6145-133	20.6	1			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6145-133	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6145-133	7.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

SDG 7816
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1220

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
305098-01	J16VJ9			7816-001	93A/93		05/20/08	05/27/08	BW	Gross Alpha in Liquid
05/07/08	327-RPS Drums		LIQUID	7816-001	93B/93		05/16/08	05/27/08	BW	Gross Beta in Liquid
05/09/08	RC-042-036	RC-042		7816-001	GAM		05/14/08	05/16/08	CSS	Gamma Scan in Liquid
				7816-001	PU		05/21/08	05/21/08	BW	Plutonium-238,239/240, Liquid
				7816-001	U		05/20/08	05/21/08	BW	Uranium in Liquid
305098-02	Lab Control Sample			7816-002	93A/93		05/16/08	05/27/08	BW	Gross Alpha in Liquid
			LIQUID	7816-002	93B/93		05/16/08	05/27/08	BW	Gross Beta in Liquid
		RC-042		7816-002	GAM		05/14/08	05/16/08	CSS	Gamma Scan in Liquid
				7816-002	PU		05/21/08	05/21/08	BW	Plutonium-238,239/240, Liquid
				7816-002	U		05/20/08	05/21/08	BW	Uranium in Liquid
305098-03	Method Blank			7816-003	93A/93		05/16/08	05/27/08	BW	Gross Alpha in Liquid
			LIQUID	7816-003	93B/93		05/16/08	05/27/08	BW	Gross Beta in Liquid
		RC-042		7816-003	GAM		05/14/08	05/16/08	CSS	Gamma Scan in Liquid
				7816-003	PU		05/21/08	05/21/08	BW	Plutonium-238,239/240, Liquid
				7816-003	U		05/21/08	05/21/08	BW	Uranium in Liquid
305098-04	Duplicate (R805098-01)			7816-004	93A/93		05/20/08	05/27/08	BW	Gross Alpha in Liquid
05/07/08	327-RPS Drums		LIQUID	7816-004	93B/93		05/16/08	05/27/08	BW	Gross Beta in Liquid
05/09/08		RC-042		7816-004	GAM		05/14/08	05/16/08	CSS	Gamma Scan in Liquid
				7816-004	PU		05/21/08	05/21/08	BW	Plutonium-238,239/240, Liquid
				7816-004	U		05/21/08	05/21/08	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-042	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-042	Gross Beta in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
GAM	RC-042	Gamma Scan in Liquid	GAMMA_GS	1			1	1	1	4
PU	RC-042	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	1			1	1	1	4
U	RC-042	Uranium in Liquid	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				5			5	5	5	20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

7816-003 Method Blank

METHOD BLANK

SDG	7816	Client/Case no	Hanford	SDG_K1220	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R805098-03	Client sample id	Method Blank		
Dept sample id	7816-003	Material/Matrix		LIQUID	
		SAF No	RC-042		

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-3.67E-4	1.1E-03	2.56E-3	1.00E01	U	93A
Gross Beta	12587-47-2	8.72E-05	1.5E-03	2.51E-3	1.50E01	U	93B
Uranium 233/234	U-233/234	0.00E 00	6.6E-05	2.53E-4	1.00E00	U	U
Uranium 235	15117-96-1	0.00E 00	8.0E-05	3.06E-4	1.00E00	U	U
Uranium 238	U-238	0.00E 00	6.6E-05	2.53E-4	1.00E00	U	U
Plutonium 238	13981-16-3	0.00E 00	1.3E-04	4.97E-4	1.00E00	U	PU
Plutonium 239/240	PU-239/240	6.50E-05	1.3E-04	4.97E-4	1.00E00	U	PU
Potassium 40	13966-00-2	U		4.37E-1		U	GAM
Cobalt 60	10198-40-0	U		3.37E-2	5.00E-2	U	GAM
Cesium 137	10045-97-3	U		3.42E-2	5.00E-2	U	GAM
Radium 226	13982-63-3	U		6.76E-2	1.00E-1	U	GAM
Radium 228	15262-20-1	U		1.39E-1	2.00E-1	U	GAM
Europium 152	14683-23-9	U		8.74E-2	1.00E-1	U	GAM
Europium 154	15585-10-1	U		1.02E-1	1.00E-1	U	GAM
Europium 155	14391-16-3	U		6.29E-2	1.00E-1	U	GAM
Thorium 228	14274-82-9	U		8.49E-2		U	GAM
Thorium 232	TH-232	U		1.39E-1		U	GAM
Uranium 235	15117-96-1	U		1.13E-1		U	GAM
Uranium 238	U-238	U		3.86E00		U	GAM
Americium 241	14596-10-2	U		3.58E-2		U	GAM
Antimony 125	14234-35-6	U		7.56E-2		U	GAM
Barium 133	13981-41-4	U		3.52E-2		U	GAM

300 AreaD&D WasteCharatrztnSamp-OLiq

QC-BLANK #65701

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

7816-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7816

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1220

Contract No. 630

Lab sample id R805098-02

Dept sample id 7816-002

Client sample id Lab Control Sample

Material/Matrix LIQUID

SAF No RC-042

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	4.75E-02	6.4E-03	2.23E-3	1.00E01		93A	3.73E-2	1.5E-03	127	53-147	70-130
Gross Beta	3.76E-02	2.7E-03	2.12E-3	1.50E01		93B	3.73E-2	1.5E-03	101	79-121	70-130
Uranium 233/234	3.03E-02	3.2E-03	1.49E-3	1.00E00		U	3.22E-2	1.3E-03	94	80-120	80-120
Uranium 235	2.59E-02	2.9E-03	3.43E-4	1.00E00		U	2.62E-2	1.0E-03	99	79-121	80-120
Uranium 238	3.48E-02	3.6E-03	1.42E-3	1.00E00		U	3.50E-2	1.4E-03	99	80-120	80-120
Plutonium 238	4.27E-02	5.1E-03	5.00E-4	1.00E00		PU	4.30E-2	1.7E-03	99	78-122	80-120
Plutonium 239/240	4.98E-02	5.7E-03	5.00E-4	1.00E00		PU	4.83E-2	1.9E-03	103	78-122	80-120
Cobalt 60	2.84E 00	1.5E-01	7.24E-2	5.00E-2		GAM	2.54E00	1.0E-01	112	84-116	80-120
Cesium 137	3.15E 00	1.3E-01	7.83E-2	5.00E-2		GAM	2.81E00	1.1E-01	112	85-115	80-120

300 AreaD&D WasteCharatrztnSamp-OLiq

QC-LCS #65700

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

7816-004 J16VJ9

DUPLICATE

SDG	7816	Client/Case no	Hanford SDG K1220
Contact	Melissa C. Mannion	Contract	No. 630
DUPLICATE		ORIGINAL	
Lab sample id	R805098-04	Lab sample id	R805098-01
Dept sample id	7816-004	Dept sample id	7816-001
		Received	05/09/08
Client sample id	J16VJ9		
Location/Matrix	327-RPS Drums LIQUID		
Collected/Volume	05/07/08 13:30 2500 mL		
Custody/SAF No	RC-042-036 RC-042		

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	-6.65E-4	5.9E-04	1.50E-3	1.00E01	U	93A	4.05E-05	4.8E-04	1.00E-3	U	-		1.8
Gross Beta	8.12E 00	3.5E-02	2.04E-3	1.50E01		93B	8.29E 00	3.5E-02	1.79E-3		2	23	0.3
Uranium 233/234	6.36E-05	6.4E-05	2.43E-4	1.00E00	U	U	6.14E-05	6.2E-05	2.35E-4	U	-		0
Uranium 235	0.00E 00	7.7E-05	2.95E-4	1.00E00	U	U	7.44E-05	7.5E-05	2.84E-4	U	-		1.4
Uranium 238	9.54E-05	1.3E-04	2.43E-4	1.00E00	U	U	0.00E 00	6.1E-05	2.35E-4	U	-		1.3
Plutonium 238	-5.33E-5	2.1E-04	5.10E-4	1.00E00	U	PU	0.00E 00	8.6E-05	3.29E-4	U	-		0.5
Plutonium 239/240	0.00E 00	1.1E-04	4.08E-4	1.00E00	U	PU	0.00E 00	8.6E-05	3.28E-4	U	-		0
Potassium 40	U		1.36E00		U	GAM	U		8.78E-1	U	-		0.6
Cobalt 60	U		4.84E-2	5.00E-2	U	GAM	U		3.89E-2	U	-		0.3
Cesium 137	1.94E 00	8.2E-02	6.44E-2	5.00E-2		GAM	1.86E 00	8.3E-02	5.31E-2		4	17	0.7
Radium 226	U		1.17E-1	1.00E-1	U	GAM	U		9.48E-2	U	-		0.3
Radium 228	U		2.37E-1	2.00E-1	U	GAM	U		2.25E-1	U	-		0.1
Europium 152	U		1.56E-1	1.00E-1	U	GAM	U		1.44E-1	U	-		0.1
Europium 154	U		1.39E-1	1.00E-1	U	GAM	U		1.07E-1	U	-		0.4
Europium 155	U		1.39E-1	1.00E-1	U	GAM	U		1.26E-1	U	-		0.1
Thorium 228	U		9.08E-2		U	GAM	U		8.81E-2	U	-		0
Thorium 232	U		2.37E-1		U	GAM	U		2.25E-1	U	-		0.1
Uranium 235	U		2.42E-1		U	GAM	U		1.99E-1	U	-		0.3
Uranium 238	U		6.07E00		U	GAM	U		4.77E00	U	-		0.3
Americium 241	U		2.18E-1		U	GAM	U		1.16E-1	U	-		0.8
Antimony 125	U		1.33E-1		U	GAM	U		1.16E-1	U	-		0.2
Barium 133	U		6.35E-2		U	GAM	U		5.66E-2	U	-		0.2

300 AreaD&D WasteCharatrztnSamp-OLiq

QC-DUP#1 65702

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

7816-001 J16VJ9

DATA SHEET

SDG	7816	Client/Case no	Hanford	SDG K1220	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R805098-01	Client sample id	J16VJ9		
Dept sample id	7816-001	Location/Matrix	327-RPS Drums	LIQUID	
Received	05/09/08	Collected/Volume	05/07/08 13:30	2500 mL	
		Custody/SAF No	RC-042-036	RC-042	

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	4.05E-05	4.8E-04	1.00E-3	1.00E01	U	93A
Gross Beta	12587-47-2	8.29E 00	3.5E-02	1.79E-3	1.50E01		93B
Uranium 233/234	U-233/234	6.14E-05	6.2E-05	2.35E-4	1.00E00	U	U
Uranium 235	15117-96-1	7.44E-05	7.5E-05	2.84E-4	1.00E00	U	U
Uranium 238	U-238	0.00E 00	6.1E-05	2.35E-4	1.00E00	U	U
Plutonium 238	13981-16-3	0.00E 00	8.6E-05	3.29E-4	1.00E00	U	PU
Plutonium 239/240	PU-239/240	0.00E 00	8.6E-05	3.28E-4	1.00E00	U	PU
Potassium 40	13966-00-2	U		8.78E-1		U	GAM
Cobalt 60	10198-40-0	U		3.89E-2	5.00E-2	U	GAM
Cesium 137	10045-97-3	1.86E 00	8.3E-02	5.31E-2	5.00E-2		GAM
Radium 226	13982-63-3	U		9.48E-2	1.00E-1	U	GAM
Radium 228	15262-20-1	U		2.25E-1	2.00E-1	U	GAM
Europium 152	14683-23-9	U		1.44E-1	1.00E-1	U	GAM
Europium 154	15585-10-1	U		1.07E-1	1.00E-1	U	GAM
Europium 155	14391-16-3	U		1.26E-1	1.00E-1	U	GAM
Thorium 228	14274-82-9	U		8.81E-2		U	GAM
Thorium 232	TH-232	U		2.25E-1		U	GAM
Uranium 235	15117-96-1	U		1.99E-1		U	GAM
Uranium 238	U-238	U		4.77E00		U	GAM
Americium 241	14596-10-2	U		1.16E-1		U	GAM
Antimony 125	14234-35-6	U		1.16E-1		U	GAM
Barium 133	13981-41-4	U		5.66E-2		U	GAM

300 AreaD&D WasteCharatrztnSamp-OLiq

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

Test	PU
Matrix	LIQUID
SDG	7816
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K1220

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
reparation batch 6145-133								
305098-01			7816-001	J16VJ9	U		U	
305098-02			7816-002	Lab Control Sample	ok		ok	
305098-03			7816-003	Method Blank	U		U	
305098-04			7816-004	Duplicate (R805098-01)	-	U	-	U
ominal values and limits from method				RDLs (pCi/mL)	1.00E00		1.00E00	
00 AreaD&D WasteCharatrztnSamp-OLiq								

: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 6145-133			2σ prep error 8.0 %	Reference Lab Notebook #6145, pg. 133												
305098-01			J16VJ9	3.29E-4	330			64		127			14	05/21/08	05/21	SS-064
305098-02			Lab Control Sample	5.00E-4	300			52		127				05/21/08	05/21	SS-065
305098-03			Method Blank	4.97E-4	300			55		127				05/21/08	05/21	SS-066
305098-04			Duplicate (R805098-01)	5.10E-4	330			60		127			14	05/21/08	05/21	SS-032
ominal values and limits from method				1.00E00	300			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 9

AVERAGES ± 2 SD	MDA	4.59E-4	± 1.74E-4
FOR 4 SAMPLES	YIELD	58	± 11

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

Test	U
Matrix	LIQUID
SDG	7816
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K1220

.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 6145-133														
305098-01			7816-001	J16VJ9	U		U		U					
305098-02			7816-002	Lab Control Sample	ok		ok		ok					
305098-03			7816-003	Method Blank	U		U		U					
305098-04			7816-004	Duplicate (R805098-01)	-	U	-	U	-	U				
ominal values and limits from method				RDLs (pCi/mL)	1.00E00		1.00E00		1.00E00					
00 AreaD&D WasteCharatrztnSamp-OLiq											Averages			

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 6145-133			2σ prep error 8.0 % Reference Lab Notebook #6145, pg. 133													
305098-01			J16VJ9	2.84E-4	330			93		116			13	05/20/08	05/20	SS-055
305098-02			Lab Control Sample	1.49E-3	300			91		116				05/20/08	05/20	SS-056
305098-03			Method Blank	3.06E-4	300			87		127				05/20/08	05/21	SS-055
305098-04			Duplicate (R805098-01)	2.95E-4	330			89		127			14	05/20/08	05/21	SS-056
ominal values and limits from method				1.00E00	300					100			180			

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

AVERAGES ± 2 SD	MDA	5.94E-4	± 1.20E-3
FOR 4 SAMPLES	YIELD	90	± 5

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

Test 93A	Matrix LIQUID
SDG 7816	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID

GAS PROPORTIONAL COUNTING

Client	Hanford
Contract	No. 630
Contract	SDG K1220

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
eparation batch 6145-133						
805098-01	93		7816-001	J16VJ9	U	
805098-02	93		7816-002	Lab Control Sample	ok	
805098-03	93		7816-003	Method Blank	U	
805098-04	93		7816-004	Duplicate (R805098-01)	-	U

ominal values and limits from method RDLs (pCi/mL) 1.00E01

00 AreaD&D WasteCharatrztnSamp-OLiq

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6145-133			2σ prep error 20.6 % Reference Lab Notebook #6145, pg. 133													
805098-01	93		J16VJ9	1.00E-3	300			56		200			13	05/14/08	05/20	GRB-109
805098-02	93		Lab Control Sample	2.23E-3	300			60		100				05/14/08	05/16	GRB-110
805098-03	93		Method Blank	2.56E-3	300			59		100				05/14/08	05/16	GRB-114
805098-04	93		Duplicate (R805098-01)	1.50E-3	300			55		200			13	05/14/08	05/20	GRB-110
ominal values and limits from method				1.00E01	300			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	MDA	1.82E-3	± 1.41E-3
FOR 4 SAMPLES	RESIDUE	58	± 5

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

Test 93B Matrix LIQUID
SDG 7816
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1220

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
:eparation batch 6145-133					
305098-01	93		7816-001	J16VJ9	8.29E 00
305098-02	93		7816-002	Lab Control Sample	ok
305098-03	93		7816-003	Method Blank	U
305098-04	93		7816-004	Duplicate (R805098-01)	ok

ominal values and limits from method RDLs (pCi/mL) 1.50E01
)0 AreaD&D WasteCharatrztnSamp-OLiq

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6145-133 2σ prep error 11.0 % Reference Lab Notebook #6145, pg. 133																
305098-01	93		J16VJ9	1.79E-3	300			56		100			9	05/14/08	05/16	GRB-109
305098-02	93		Lab Control Sample	2.12E-3	300			60		100				05/14/08	05/16	GRB-110
305098-03	93		Method Blank	2.51E-3	300			59		100				05/14/08	05/16	GRB-114
305098-04	93		Duplicate (R805098-01)	2.04E-3	300			55		100			9	05/14/08	05/16	GRB-115
ominal values and limits from method				1.50E01	300			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 MDA 2.12E-3 ± 5.97E-4
FOR 4 SAMPLES RESIDUE 58 ± 5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1220

Test GAM Matrix LIQUID
SDG 7816
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1220

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
eparation batch 6145-133						
305098-01			7816-001	J16VJ9	U	1.86E 00
305098-02			7816-002	Lab Control Sample	ok	ok
305098-03			7816-003	Method Blank	U	U
305098-04			7816-004	Duplicate (R805098-01)	- U	ok
minal values and limits from method				RDLs (pCi/mL)	5.00E-2	5.00E-2

00 AreaD&D WasteCharatrztnSamp-OLiq

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
eparation batch 6145-133			2σ prep error 7.0 % Reference Lab Notebook #6145, pg. 133													
305098-01			J16VJ9	5.31E-2	100					407			7	05/13/08	05/14	JR,02,00
305098-02			Lab Control Sample	7.83E-2	100					407				05/13/08	05/14	JR,07,00
305098-03			Method Blank	3.42E-2	100					816				05/13/08	05/14	JR,07,00
305098-04			Duplicate (R805098-01)	6.44E-2	100					817			7	05/13/08	05/14	JR,08,00
minal values and limits from method				5.00E-2	100					100			180			

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

AVERAGES ± 2 SD MDA 5.75E-2 ± 3.73E-2
FOR 4 SAMPLES YIELD _____ ± _____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/28/08

SDG 7816
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1220

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/28/08

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1220

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

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REPORT GUIDE

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Case no SDG_K1220

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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REPORT GUIDE

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DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

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GUIDE, cont.

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DATA SHEET

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

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

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

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REPORT GUIDE

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LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

DUPLICATE

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

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

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

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

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

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REPORT 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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MATRIX SPIKE

for the recovery.

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

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

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

7814

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2

Collector: Ron Holeman	Company Contact: Tim Lee	Telephone No.: 627-8639	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 Days		
Project Designation: 300 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums K1220 (7816)	SAF No.: RC-042	
Ice Chest No.: ERC-02-406	Field Logbook No.: EL-1603-2	COA: see below	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A080230	Bill of Lading/Air Bill No.: See ospc	

POSSIBLE SAMPLE HAZARDS/REMARKS

RAD, Lead

Special Handling and/or Storage

Preservation	Cool 4C	None	None	None	None	None	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	250mL	500mL	500mL	1000mL	500mL	500mL	60mL				
SAMPLE ANALYSIS	TSS - 160.2	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen				
Sample No. / Matrix * / Sample Date / Sample Time											
J16VJ9 / OTHER LIQUID / 5-7-08 / 13:30		X	X	X	X	X					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Ron Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
Relinquished By/Removed From	TA Lee	5-7-08/1515	1060 1B	5-7-08/1515
Relinquished By/Removed From	1060/1B 0930	MAY 08 2008	Received By/Stored In: 0930 mstankovich	MAY 08 2008
Relinquished By/Removed From	mstankovich 0930	MAY 08 2008	Received By/Stored In: FedEx	
Relinquished By/Removed From	FED EX		Received By/Stored In	05/09/08 09:35
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

NW JM

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

Ak 5/9/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 05/09/08 09:35 CoC No. RC-042-036

Container I.D. No. RC-02-406 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

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: 1 Sample Matrix LIQUID
7. Number of containers per sample: 4 (Or see CoC ____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [X] pH ____ Preservative ____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date ____
15. Inspected by [signature] Date: 05/09/08 Time: 11:00

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J16VJ9	<60						

Ion Chamber Ser. No. ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09 MAY 07

LvLI
LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

17 June 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0805L097
SDG #	K1220
SAF #	RC-042
Date Received	5/9/08
# Samples	1
Matrix	OTHER LIQUID
Volatiles	X
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

RECEIVED
JUN 2008

DATE RECEIVED: 05/09/08 LVL LOT # 0805L097

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VJ9	001	W	08LVG088	05/07/08	N/A	05/21/08
J16VJ9	001 MS	W	08LVG088	05/07/08	N/A	05/21/08
J16VJ9	001 MSD	W	08LVG088	05/07/08	N/A	05/21/08
LAB QC:						
VBLKAC	MB1	W	08LVG088	N/A	N/A	05/21/08
VBLKAC	MB1 BS	W	08LVG088	N/A	N/A	05/21/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-042
LVL #: 0805L097
SDG/SAF # K1220/RC-042

W.O. #: 11343-606-001-9999-00
Date Received: 05-09-2008

GC/MS VOLATILE

One (1) water sample was collected on 05-07-2008.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 05-21-2008.

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. Samples were analyzed within required holding time.
2. Non-target compounds were detected in the the method blank 08LVG088-MB1.
3. Two (2) of fifteen (15) surrogate recoveries were outside acceptance criteria. However, the analysis of the matrix spike and the method blank fulfills the reanalysis requirement.
4. All matrix spike recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank was below the reporting limit for all target compounds
7. All internal standard area and retention time criteria were met.

r:\group\data\2008\voa\tnu\0805-097kw1.doc

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

LvLI
LIONVILLE LABORATORY INC.

8. Manual integrations are performed according to SOP QA-125 to produce quality data with 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").

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."

Ian Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/23/08
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.

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 resolve 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 - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

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

Volatiles by GC/MS, HSL List

Report Date: 05/23/08 08:54

RFW Batch Number: 0805L097 Client: TNUHANFORD RC-042 K1220 Work Order: 11343606001 Page: 1a

000000007

	Cust ID:	J16VJ9	J16VJ9	J16VJ9	VBLKAC	VBLKAC BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LVG088-MB1	08LVG088-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Toluene-d8	108 %	108 %	112 %	108 %	109 %
	Bromofluorobenzene	110 %	111 %	119 * %	115 %	116 * %
	1,2-Dichloroethane-d4	112 %	111 %	113 %	110 %	112 %
Chloromethane		10 U	79 %	86 %	10 U	82 %
Bromomethane		10 U	93 %	92 %	10 U	90 %
Vinyl Chloride		10 U	86 %	90 %	10 U	83 %
Chloroethane		10 U	101 %	102 %	10 U	100 %
Methylene Chloride		4 JB	88 %	95 %	4 J	86 %
Acetone		10 U	131 %	174 %	10 U	108 %
Carbon Disulfide		5 U	115 %	122 %	5 U	114 %
1,1-Dichloroethene		5 U	105 %	113 %	5 U	106 %
1,1-Dichloroethane		5 U	96 %	104 %	5 U	97 %
1,2-Dichloroethene (total)		5 U	96 %	105 %	5 U	95 %
Chloroform		5 U	102 %	110 %	5 U	99 %
1,2-Dichloroethane		5 U	102 %	110 %	5 U	100 %
2-Butanone		10 U	92 %	103 %	10 U	98 %
1,1,1-Trichloroethane		5 U	99 %	106 %	5 U	99 %
Carbon Tetrachloride		5 U	100 %	107 %	5 U	98 %
Bromodichloromethane		5 U	102 %	107 %	5 U	98 %
1,2-Dichloropropane		5 U	98 %	103 %	5 U	96 %
cis-1,3-Dichloropropene		5 U	102 %	107 %	5 U	94 %
Trichloroethene		5 U	96 %	104 %	5 U	93 %
Dibromochloromethane		5 U	100 %	109 %	5 U	93 %
1,1,2-Trichloroethane		5 U	102 %	112 %	5 U	98 %
Benzene		5 U	93 %	99 %	5 U	91 %
Trans-1,3-Dichloropropene		5 U	104 %	108 %	5 U	97 %
Bromoform		5 U	101 %	106 %	5 U	84 %
4-Methyl-2-pentanone		10 U	100 %	110 %	10 U	100 %
2-Hexanone		10 U	104 %	114 %	10 U	95 %
Tetrachloroethene		5 U	96 %	102 %	5 U	93 %
1,1,2,2-Tetrachloroethane		5 U	101 %	111 %	5 U	99 %
Toluene		5 U	104 %	109 %	5 U	102 %

*= Outside of EPA CLP QC limits.

Cust ID:	J16VJ9	J16VJ9	J16VJ9	VBLKAC	VBLKAC BS
RFW#:	001	001 MS	001 MSD	08LVG088-MB1	08LVG088-MB1
Chlorobenzene	5 U	97 %	104 %	5 U	96 %
Ethylbenzene	5 U	103 %	114 %	5 U	104 %
Styrene	5 U	105 %	113 %	5 U	104 %
Xylenes (total)	5 U	105 %	110 %	5 U	102 %
cis-1,2-dichloroethene	5 U	92 %	103 %	5 U	93 %
trans-1,2-dichloroethene	5 U	101 %	107 %	5 U	97 %

*= Outside of EPA CLP QC limits.

000000008

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16VJ9

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 0805L097-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q052107

Level: (low/med) LOW Date Received: 05/09/08

% Moisture: not dec. _____ Date Analyzed: 05/21/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKAC

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 08LVG088-MB1

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q052106

Level: (low/med) LOW Date Received: 05/21/08

% Moisture: not dec. _____ Date Analyzed: 05/21/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.578	9	J

FORM 1 VOA-TIC 1/87 Rev.

nville Laboratory Use Only

805L097

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000011

nt TNU HANFORD SAF# RC-062

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager OJohnson

SW846 Del STD TAT 15 days

e Rec'd 5-9-08 Date Due 5-24-08

		A	B	C			D		E		F	G	H	I	J	K
Refrigerator #		6	3	3			6		3		3	3	3	3	3	3
#/Type Container	Liquid	1G	1G	1G			1G		1G		1G	1G	1G	1G	1G	1G
#/Type Container	Solid															
Volume			950	950			125		500		250	250	125	125	125	125
Preservatives		—	—	—			—		—		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb		TOC		Metal	CN	TSS	TDS	pH	Nitr.	Sulf.	Phos.

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260 H	8270 H	OPC 18			IOCT		Metal		ITSS	ITDS	IPH	IIGN	ISFD	INH3N
Soil	001	J16VJ9	✓	✓	W	5-7-08	1330	X	X	X			X		X		X	X	X	X	X	X
Sediment																						
Solid																						
Sludge																						
Water																						
Oil																						
Air																						
Drum Solids																						
Drum Liquids																						
EP/TCLP																						
Leachate																						
Wipe																						
Other																						
Fish																						

Lionville Laboratory Use Only

cial Instructions:

metA① = HSL + Si, Li
NO CO, TL

Special Instructions:

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

elinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
		5/9/08	1025					ORIGINAL REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 1 of 2

llector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
ɔject Designation: 300 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
: Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
ipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

AD, Lead

pecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C
Type of Container	Gs*	aG	aG	G/P	P	G/P	G/P	G	G/P	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume Rep 5/6/08	40mL	1000mL	1000mL	~~300mL~~ 500mL	~~50mL~~ 125mL	~~30g~~ 125mL	~~100mL~~ 125mL	~~75mL~~ 125mL	~~150mL~~ 250mL	~~40mL~~ 125mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	pH (Water) - 9040	Sulfides - 9030	Ammonia - 350.3 (Nitrogen in ammonia)	Ignitability - 1010	TDS - 160.1	TOC - 415.1
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample No.	Matrix *	Sample Date	Sample Time										
6VJ9	OTHER LIQUID	5-7-08	13:30	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
on Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
TA Lee	5-7-08/1515	1060 CB	5-7-08/1515
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
260/CB 0900	MAY 08 2008	MSTankovich 0900	MAY 08 2008
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WCH MSTankovich 0900	MAY 08 2008		FedEx
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	5-9-08 1025	P. Kennedy	5-9-08 1025
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

Matrix *

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

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

CH-EE-011

000000012

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2

llector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
ɔject Designation: 300 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
ipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

AD, Lead

pecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	None	None	None	None	None	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250mL	500mL	500mL	1000mL	5g	500mL	60mL			
SAMPLE ANALYSIS	TSS - 160.2	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen			

Sample No.	Matrix *	Sample Date	Sample Time									
6VJ9	OTHER LIQUID	5-7-08	13:30	X								

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ron Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
Alex Smotzer	5-7-08/1515	1060 CB	5-7-08/1515
260/CB	0900 MAY 0 8 2008	0900 MSTankovich	MAY 0 8 2008
WCH MSTankovich	0900 MAY 0 8 2008		FedEx
FedEx	5-9-08 1025		5-9-08 1025

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

Matrix *

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

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-042

Date: 5/9/08

LvLI Batch #: 08051097

Sample Custodian: K Kennedy

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7910624426014
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 3-4	°C	Cooler # SML-495
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 PH	
Short holds taken to wet lab?	☑ Yes	☐ No	☐ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B000000014

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

RECEIVED
JUN 2008

DATE RECEIVED: 05/09/08 LVL LOT # 0805L097

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VJ9	001	W	08LE0232	05/07/08	05/13/08	05/22/08
LAB QC:						
SBLKUW	MB1	W	08LE0232	N/A	05/13/08	05/22/08
SBLKUW	MB1 BS	W	08LE0232	N/A	05/13/08	05/22/08
SBLKUW	MB1 BSD	W	08LE0232	N/A	05/13/08	05/22/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-042
LVL #: 0805L097
SDG/SAF # K1220 / RC-042

W.O. #: 11343-606-001-9999-00
Date Received: 05-09-2008

SEMIVOLATILE

One (1) water sample was collected on 05-07-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 05-13-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 05-22-2008.

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. The sample was extracted and analyzed within holding time.

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

3. All surrogate recoveries were within acceptance criteria.

4. Seven (7) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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

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

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

8. Internal standard criteria were not met for sample 08LE0119-MB1T. The out of criteria samples was reanalyzed on 03-26-08 with similar results and not reported.

r:\group\data\2008\bna\tnu\0805-097kw1.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 15 pages.

LIONVILLE LABORATORY INC.

9. 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").

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/28/08
Date

Laboratory Sample Discrepancy Report (SDR) SDR #: 05MS116

Initiator: Sharon Saylor Batch: 0F05L097 Parameter: 8270
Date: 5-23-08 Samples: 85, 850 Matrix: Aqueous
Client: Thru RECOR K1220 Method: SW846/MCAWW/CLP/ Prep Batch: 0F/E0232

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① no recovery of 3,3'-dichlorobenzidine in the 85 + 850 (within criteria 0-120%)

② low recovery of several spike analytes in the 85 + 850

2. Known or Probable Causes(s) Chlorobenzene, nitrobenzene are subject to erratic chromatographic behavior especially if the GC system contaminated with high boiling material. Often sporadic. 3,3 dichlorobenzidine can be subject to oxidative losses during concentration of the extract. [illegible]

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: [illegible] 5/23/08

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

5. Final Action...signature/date: MDS 5/28/08 Other Explanation:

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

When Final Action has been recorded, forward original to QA for diposition.

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

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

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

MP	-	Missed Peak: manually added peak not found by automatic quan program.
PA	-	Peak Assignment: quan report was changed to reflect correct peak assignment.
RI	-	Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
SP	-	Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
CB	-	Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
PI	-	Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

000000008

	Cust ID:	J16VJ9	SBLKUW	SBLKUW BS	SBLKUW BSD
Sample Information	RFW#:	001	08LE0232-MB1	08LE0232-MB1	08LE0232-MB1
	Matrix:	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Nitrobenzene-d5	61 %	48 %	55 %	68 %
	2-Fluorobiphenyl	67 %	44 %	54 %	67 %
	Terphenyl-d14	87 %	86 %	71 %	90 %
	Phenol-d5	52 %	53 %	58 %	64 %
	2-Fluorophenol	51 %	50 %	54 %	58 %
	2,4,6-Tribromophenol	71 %	52 %	73 %	92 %
Phenol		10 U	10 U	59 %	72 %
bis(2-Chloroethyl)ether		10 U	10 U	47 %	56 %
2-Chlorophenol		10 U	10 U	59 %	70 %
1,3-Dichlorobenzene		10 U	10 U	41 %	47 %
1,4-Dichlorobenzene		10 U	10 U	43 %	48 %
1,2-Dichlorobenzene		10 U	10 U	44 %	48 %
2-Methylphenol		10 U	10 U	62 %	69 %
2,2'-oxybis(1-Chloropropane)		10 U	10 U	52 %	62 %
3/4 Methylphenol		10 U	10 U	70 %	76 %
N-Nitroso-di-n-propylamine		10 U	10 U	58 %	69 %
Hexachloroethane		10 U	10 U	37 * %	43 %
Nitrobenzene		10 U	10 U	50 %	63 %
Isophorone		10 U	10 U	66 %	80 %
2-Nitrophenol		10 U	10 U	59 %	80 %
2,4-Dimethylphenol		10 U	10 U	64 %	79 %
bis(2-Chloroethoxy)methane		10 U	10 U	47 %	66 %
2,4-Dichlorophenol		10 U	10 U	61 %	78 %
1,2,4-Trichlorobenzene		10 U	10 U	46 %	56 %
Naphthalene		10 U	10 U	49 * %	62 %
4-Chloroaniline		10 U	10 U	3 * %	4 * %
Hexachlorobutadiene		10 U	10 U	48 %	59 %
4-Chloro-3-methylphenol		10 U	10 U	75 %	84 %
2-Methylnaphthalene		10 U	10 U	58 %	68 %
Hexachlorocyclopentadiene		10 U	10 U	40 %	60 %
2,4,6-Trichlorophenol		10 U	10 U	65 %	90 %
2,4,5-Trichlorophenol		25 U	25 U	70 %	92 %

*= Outside of EPA CLP QC limits.

Cust ID:	J16VJ9		SBLKUW		SBLKUW BS		SBLKUW BSD	
RFW#:	001		08LE0232-MB1		08LE0232-MB1		08LE0232-MB1	
2-Chloronaphthalene	10	U	10	U	56 *	%	76	%
2-Nitroaniline	25	U	25	U	68	%	84	%
Dimethylphthalate	10	U	10	U	67	%	82	%
Acenaphthylene	10	U	10	U	60	%	77	%
2,6-Dinitrotoluene	10	U	10	U	69	%	81	%
3-Nitroaniline	25	U	25	U	9 *	%	16	%
Acenaphthene	10	U	10	U	60	%	78	%
2,4-Dinitrophenol	25	U	25	U	92	%	98	%
4-Nitrophenol	25	U	25	U	77	%	84	%
Dibenzofuran	10	U	10	U	66	%	82	%
2,4-Dinitrotoluene	10	U	10	U	75	%	84	%
Diethylphthalate	10	U	10	U	68	%	77	%
4-Chlorophenyl-phenylether	10	U	10	U	66	%	79	%
Fluorene	10	U	10	U	66	%	78	%
4-Nitroaniline	25	U	25	U	39	%	43	%
4,6-Dinitro-2-methylphenol	25	U	25	U	85	%	106	%
N-Nitrosodiphenylamine (1)	10	U	10	U	29	%	56	%
4-Bromophenyl-phenylether	10	U	10	U	58	%	84	%
Hexachlorobenzene	10	U	10	U	68	%	94	%
Pentachlorophenol	25	U	25	U	89	%	111 *	%
Phenanthrene	10	U	10	U	66	%	86	%
Anthracene	10	U	10	U	65	%	84	%
Carbazole	10	U	10	U	52	%	68	%
Di-n-butylphthalate	0.5	J	10	U	61	%	76	%
Fluoranthene	10	U	10	U	67	%	79	%
Pyrene	10	U	10	U	65	%	88	%
Butylbenzylphthalate	10	U	10	U	65	%	82	%
3,3'-Dichlorobenzidine	10	U	10	U	0	%	0	%
Benzo(a)anthracene	10	U	10	U	66	%	83	%
Chrysene	10	U	10	U	69	%	85	%
bis(2-Ethylhexyl)phthalate	5	JB	3	J	68	%	80	%
Di-n-octyl phthalate	10	U	10	U	80	%	74	%
Benzo(b)fluoranthene	10	U	10	U	78	%	77	%
Benzo(k)fluoranthene	10	U	10	U	74	%	85	%
Benzo(a)pyrene	10	U	10	U	73	%	83	%
Indeno(1,2,3-cd)pyrene	10	U	10	U	62	%	94	%
Dibenz(a,h)anthracene	10	U	10	U	63	%	97	%
Benzo(g,h,i)perylene	10	U	10	U	60	%	92	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16VJ9

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

Client: TNUHANFORD RC-042 K1220

Matrix: (soil/water) WATER

Lab Sample ID: 0805L097-001

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: N052212

Level: (low/med) LOW

Date Received: 05/09/08

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

Date Extracted: 05/13/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/22/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.595	50	J
2.	UNKNOWN	34.083	5	J
3.	UNKNOWN	34.475	5	J
4.	UNKNOWN	37.883	6	J
5.	UNKNOWN	42.642	5	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKUW

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

Client: TNUHANFORD RC-042 K1220

Matrix: (soil/water) WATER

Lab Sample ID: 08LE0232-MB1

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: N052211

Level: (low/med) LOW

Date Received: 05/13/08

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

Date Extracted: 05/13/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/22/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.407	4	J
2.	UNKNOWN	3.468	4	J
3.	UNKNOWN	3.503	6	J
4. 75-85-4	AMYLENE HYDRATE	3.599	40	JN
5.	UNKNOWN	41.957	30	J

ville Laboratory Use Only

805L097

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI Lionville Laboratory Inc

000000012

t TNU HANFORD SAF# RC-0042

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ville Laboratory Project Manager OJohnson

SW846 Del STD TAT 15 days

Rec'd 5-9-08 Date Due 5-24-08

		A	B	C			D		E		F	G	H	I	J	K
Refrigerator #		6	3	3			6		3		3	3	3	3	3	3
#/Type Container	Liquid	1G	1G	1G			1G		1G		1G	1G	1G	1G	1G	1G
#/Type Container	Solid															
Volume			950	950			125		250		250	250	125	125	125	125
Preservatives		—	—	—			—		—		—	—	—	—	—	—
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest/PCB	Herb		TOC		INORG Metal	INORG CN	TSS	TDS	pH	Fluor.	Sulfide	Phenols

Lionville Laboratory Use Only

UX: EB:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260H	8260SH	8PCB			IOCT		Metal		ITSS	ITDS	IPH	IIGN	ISFD	INH3N
Soil	001	J16VJ9	✓	✓	W	5-7-08	1330	X	X	X			X		X		X	X	X	X	X	X
Sediment																						
Solid																						
Sludge																						
Water																						
Oil																						
Air																						
Drum Solids																						
Drum Liquids																						
TEP/TCLP Leachate																						
Wipe																						
Other																						
Fish																						

cial Instructions:

metal ① = HSL + Si, Li
NO CO, TL

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/9/08	1025

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-042-036** | Page 1 of 2

lector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
ject Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

D, Lead

ecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C
Type of Container	Gs*	aG	aG	G/P	P	G/P	G/P	G	G/P	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume Rev 5/6/08	40mL	1000mL	1000mL	~~300mL~~ 500mL	~~50mL~~ 125mL	~~30g~~ 125mL	~~100mL~~ 125mL	~~75mL~~ 125mL	~~150mL~~ 250mL	~~40mL~~ 125mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	pH (Water) - 9040	Sulfides - 9030	Ammonia - 350.3 (Nitrogen in ammonia)	Ignitability - 1010	TDS - 160.1	TOC - 415.1
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample No.	Matrix *	Sample Date	Sample Time										
iVJ9	OTHER LIQUID	5-7-08	13:30	X	X	X	X	X	X	X	X	X	X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
n Holeman	5-7-08 14:15	TA Lee Smoffer	5-7-08/1415
A Lee Smoffer	5-7-08/1515	1060 CB	5-7-08/1515
60/CB	0900 MAY 08 2008	0900 MSTankovich	MAY 08 2008
WCH MSTankovich	0900 MAY 08 2008		FedEx
Fed Ex	5-9-08 1025	V. Nemeth	5-9-08 1025

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

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
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000013

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2
lector Ron Holeman	Company Contact: Tim Lee; Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K; Data Turnaround: 15 Days
iect Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2; COA: see below	Method of Shipment: FedEx	
nped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: See OSPC	

000000014

OSSIBLE SAMPLE HAZARDS/REMARKS

ID, Lead

ecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	None	None	None	None	None	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P			
No. of Container(s)	1	1	1	1	1	1	1			
Volume	250mL	500mL	500mL	1000mL	5g	500mL	60mL			
SAMPLE ANALYSIS	TSS - 160.2	Gross Alpha	Gross Beta	See item (1) in Special Instructions	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen			

Sample No.	Matrix *	Sample Date	Sample Time										
5VJ9	OTHER LIQUID	5-7-08	13:30	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ron Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
Alex Smotzer	5-7-08/1515	1060 IB	5-7-08/1515
1060 IB	0800 MAY 0 8 2008	0900 MSt Markovich	MAY 0 8 2008
WCH MSt Markovich	0900 MAY 0 8 2008		FedEx
FedEx	5-9-08 1025		5-9-08 1025

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Antimony-125, Barium-133, Radium-226, Radium-228)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

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

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

CH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-042

Date: 5/9/08

LvLI Batch #: 0805L097

Sample Custodian: K Kennedy

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7910624260 14
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 3-4	°C	Cooler # SML-495
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 PH	
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

SDR #: 07/05116

Initiator: Sharon Saylor
Date: 5-23-08
Client: Thru Recor K1220

Batch: 0F05L097
Samples: 55, 550
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Aqueous
Prep Batch: 07E0232

1. Reason for SDR

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

b. General Discrepancy

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

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

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

① no recovery of 3,3'-dichlorobenzidine in the 55 + 550 (within criteria 0-120%)

② low recovery of several spike analytes in the 55 + 550

2. Known or Probable Causes(s) Chlorobenzilate, nitrobenzene are subject to erratic chromatographic behavior especially if the GC system contaminated with high boiling material. Other sporadic. 3,3'-dichlorobenzidine can be subject to oxidative losses during concentration of the extract. RWS 5/23/08

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: 5/23/08

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

5. Final Action...signature/date: MDS 5/28/08 Other Explanation:

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

When Final Action has been recorded, forward original to QA for diposition.

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

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

QA-139-A-0208

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-042 K1220

RECEIVED
JUN 2008

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VJ9	001	W	08LE0230	05/07/08	05/12/08	05/16/08
LAB QC:						
PBLKQE	MB1	W	08LE0230	N/A	05/12/08	05/15/08
PBLKQE	MB1 BS	W	08LE0230	N/A	05/12/08	05/15/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-042
LVL #: 0805L097
SDG/SAF # K1220 / RC-042

W.O. #: 11343-606-001-9999-00
Date Received: 05-09-2008

PCB

One (1) water sample was collected on 05-07-2008.

The sample and its associated QC samples were extracted on 05-12-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 05-15,16-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

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

1. The sample was extracted and analyzed within required holding time
2. The sample and its 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. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The matrix spike analyses are associated with LvLI lot 0805L085.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
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.

f:\group\data\pest\tnu\0805-097kw1.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 10 pages.

LIONVILLE LABORATORY INC.

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

5/22/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 05/16/08 12:15

RFW Batch Number: 0805L097 Client: TNU-HANFORD RC-042 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J16VJ9	PBLKQE	PBLKQE BS
Sample Information	RFW#:	001	08LE0230-MB1	08LE0230-MB1
	Matrix:	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L
Surrogate: Tetrachloro-m-xylene		94 %	73 %	76 %
Decachlorobiphenyl		73 %	68 %	87 %
Aroclor-1016		0.70 U	0.40 U	81 %
Aroclor-1221		0.70 U	0.40 U	0.40 U
Aroclor-1232		0.70 U	0.40 U	0.40 U
Aroclor-1242		0.70 U	0.40 U	0.40 U
Aroclor-1248		0.70 U	0.40 U	0.40 U
Aroclor-1254		0.70 U	0.40 U	0.40 U
Aroclor-1260		0.70 U	0.40 U	80 %

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 05/12/08 Extraction Batch No: 08LE0230 Analyst: MF Method: CONT3520

Test: OPCB Cleanup Date: 05/14/08 Analyst: MF Client: VISTA ENGINEERING

LIMS Report Date: 05/15/08 Solvent: DCM,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
0805L068-	VISTA ENGINEERING										
001	G009	7	1000	1.0		10		1.0	N	0.0	10.00
002	G010	7	1000	1.0		10		1.0	N	0.0	10.00
003	G011	7	1000	1.0		10		1.0	N	0.0	10.00
004	G012	7	1000	1.0		10		1.0	N	0.0	10.00
005	G013	7	1000	1.0		10		1.0	N	0.0	10.00
0805L085-	VISTA ENGINEERING										
001	G014	7	1000	1.0		10		1.0	N	0.0	10.00
001 -S	G014	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
001 -T	G014	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
002	G015	7	1000	1.0		10		1.0	N	0.0	10.00
004	G016	7	1000	1.0		10		1.0	N	0.0	10.00
0805L097-	TNU-HANFORD RC-042										
001	J16VJ9	7	570	1.0		10		1.0	N	0.0	17.54
08LE0230-MB1	PBLKQE	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0230-MB1 -S	PBLKQE	7	1000	1.0	1.0	10		1.0	N	0.0	10.00

Comments:
Surrogate: 250 UL OLM PSURR 89916405
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	5/15/08 1225	SZ	5/15/08 12:25	GC

000000006

nville Laboratory Use Only

805L097

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

0000000007

nt TNU HANFORD SAF# RC-042

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STD TAT 15 days

Rec'd 5-9-08 Date Due 5-24-08

		A	B	C			D		E		F	G	H	I	J	K
Refrigerator #		6	3	3			6		3		3	3	3	3	3	3
#/Type Container	Liquid	1G	1G	1G			1G		1G		1G	1G	1G	1G	1G	1G
#/Type Container	Solid															
Volume			950	950			125		500		250	250	125	125	125	125
Preservatives		—	—	—			—		—		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb		TOC		Metal	CN	TSS	TDS	PH	Fluor.	Sulf.	Amm.

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260 H	8625 H	OPCB			IOCT		Metal		ITSS	ITDS	IPH	IIGN	ISSFD	INH3N
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	T16VJ9	/	/	W	5-7-08	1330	X	X	X			X		X		X	X	X	X	X	X

Lionville Laboratory Use Only

cial Instructions:

neA① = HSL + Si, Li
NO CO, TL

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/9/08	1025

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-042-036	Page 1 of 2

ector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
ject Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES / JONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

D, Lead

ecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C
Type of Container	Gs*	aG	aG	G/P	P	G/P	G/P	G	G/P	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume Rec 5/6/08	40mL	1000mL	1000mL	~~300mL~~ 500mL	~~50mL~~ 125mL	~~30g~~ 125mL	~~100mL~~ 125mL	~~75mL~~ 125mL	~~150mL~~ 250mL	~~40mL~~ 125mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	pH (Water) - 9040	Sulfides - 9030	Ammonia - 350.3 (Nitrogen in ammonia)	Ignitability - 1010	TDS - 160.1	TOC - 415.1
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample No.	Matrix *	Sample Date	Sample Time										
VJ9	OTHER LIQUID	5-7-08	13:30	X	X	X	X	X	X	X	X	X	X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
n Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
A Lee	5-7-08/1515	1060 CB	5-7-08/1515
60/CB 0900	MAY 08 2008	0900 mstankovich	MAY 08 2008
WCH mstankovich 0900	MAY 08 2008		FedEx
FedEx	5-9-08 1025		5-9-08 1025

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW SM

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

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

CH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2

lector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
iect Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

ID, Lead

pecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	None	None	None	None	None	None	None			
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	250mL	500mL	500mL	1000mL	5g	500mL	60mL				
SAMPLE ANALYSIS	TSS - 160.2	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen				

Sample No.	Matrix *	Sample Date	Sample Time										
5VJ9	OTHER LIQUID	5-7-08	13:30	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
nquished By/Removed From: n Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
nquished By/Removed From: Alex Smotzer	5-7-08/1515	Iodo 1B	5-7-08/1515
nquished By/Removed From: 160 1B 0900	MAY 0 8 2008	0900 MSt-Ankouch	MAY 0 8 2008
nquished By/Removed From: WCH MSt-Ankouch 0900	MAY 0 8 2008	Received By/Stored In	FedEx
nquished By/Removed From: FedEx	5-9-08 1025	Received By/Stored In	5-9-08 1025
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

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
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

600000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-042

Date: 5/9/08

LvLI Batch #: 0805L097

Sample Custodian: K Kennedy

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7910624260 14
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 3-4	°C	Cooler # SML-495
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 PH	
Short holds taken to wet lab?	☑ Yes	☐ No	☐ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16VJ9						
SILVER, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
SILVER, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
SILVER, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
ALUMINUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/21/08
ALUMINUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/21/08
ALUMINUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/21/08
ARSENIC, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
ARSENIC, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
ARSENIC, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
BARIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
BARIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
BARIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
BERYLLIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
BERYLLIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
BERYLLIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
CALCIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/21/08
CALCIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/21/08
CALCIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/21/08
CADMIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
CADMIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
CADMIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
CHROMIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
CHROMIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
CHROMIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
COPPER, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
COPPER, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
COPPER, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
IRON, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/21/08
IRON, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/21/08
IRON, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/21/08
MERCURY, TOTAL	001	W	08C0086	05/07/08	05/15/08	05/15/08
MERCURY, TOTAL	001 REP	W	08C0086	05/07/08	05/15/08	05/15/08
MERCURY, TOTAL	001 MS	W	08C0086	05/07/08	05/15/08	05/15/08
POTASSIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/21/08
POTASSIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/21/08
LITHIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
LITHIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
LITHIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
MAGNESIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
MAGNESIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
MAGNESIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
MANGANESE, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
MANGANESE, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
MANGANESE, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
SODIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/21/08
SODIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/21/08
SODIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/21/08
NICKEL, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
NICKEL, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
NICKEL, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
LEAD, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
LEAD, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
LEAD, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
ANTIMONY, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
ANTIMONY, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
ANTIMONY, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
SELENIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
SELENIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
SELENIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
SILICON, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
SILICON, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
SILICON, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
VANADIUM, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
VANADIUM, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
VANADIUM, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08
ZINC, TOTAL	001	W	08L0206	05/07/08	05/20/08	05/20/08
ZINC, TOTAL	001 REP	W	08L0206	05/07/08	05/20/08	05/20/08
ZINC, TOTAL	001 MS	W	08L0206	05/07/08	05/20/08	05/20/08

LAB QC:

SILVER LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
ALUMINUM LABORTORY	LC1 BS	W	08L0206	N/A	05/20/08	05/21/08
ALUMINUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/21/08
ARSENIC LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
ARSENIC, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
BARIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
BARIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
BERYLLIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
BERYLLIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
CALCIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/21/08
CALCIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/21/08
CADMIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
CADMIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
CHROMIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
CHROMIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
COPPER LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
COPPER, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
IRON LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/21/08
IRON, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/21/08
MERCURY LABORATORY	LC1 BS	W	08C0086	N/A	05/15/08	05/15/08
MERCURY, TOTAL	MB1	W	08C0086	N/A	05/15/08	05/15/08
MERCURY, TCLP LEACHA	MB2	W	08C0086	N/A	05/15/08	05/15/08
MERCURY, TCLP LEACHA	MB3	W	08C0086	N/A	05/15/08	05/15/08
POTASSIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/21/08
POTASSIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/21/08
LITHIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
LITHIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
MAGNESIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
MAGNESIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
MANGANESE LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
MANGANESE, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
SODIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/21/08
SODIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/21/08
NICKEL LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
NICKEL, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
LEAD LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
LEAD, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
ANTIMONY LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ANTIMONY, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
SELENIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
SELENIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
SILICON LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
SILICON, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
VANADIUM LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
VANADIUM, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08
ZINC LABORATORY	LC1 BS	W	08L0206	N/A	05/20/08	05/20/08
ZINC, TOTAL	MB1	W	08L0206	N/A	05/20/08	05/20/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-042
LVL#: 0805L097
SDG/SAF#: K1220 /RC-042

W.O.#: 11343-606-001-9999-00
Date Received: 05-09-08

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.

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

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

   The sample was prepped at a 2-fold dilution for ICP metals due to limited sample volume.

   The sample was prepped at a 2-fold dilution for Mercury due to sample matrix.

   The sample was rerun for Aluminum, Calcium, Iron, Potassium, and Sodium, on a different instrument. Potassium, and Sodium were rerun in file PS0521A due to CCVs that were outside the 90-110% control limits. Aluminum, Calcium, and Iron, were also rerun in file PS0521A due to sample matrix.

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

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

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages.

LvLI

LIONVILLE LABORATORY, INC.

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

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

10. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/22/08
Date

alm/m05-097

METALS METHOD GLOSSARY

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

Lot#: 0805L097

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: ✓3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✗6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	✓6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010B		__200.7				__99
Manganese	✓6010B		__200.7				__99
Mercury	✓7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	✓6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Aem discard 5/23/08

Other:_____ Method:_____

L-W1000000007

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 05/22/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16VJ9	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	80.0	u	UG/L	80.0	1.0
		Arsenic, Total	10.0	u	UG/L	10.0	1.0
		Barium, Total	4.0		UG/L	2.0	1.0
		Beryllium, Total	1.0	u	UG/L	1.0	1.0
		Calcium, Total	36100		UG/L	80.0	1.0
		Cadmium, Total	1.0	u	UG/L	1.0	1.0
		Chromium, Total	4.0	u	UG/L	4.0	1.0
		Copper, Total	4.0	u	UG/L	4.0	1.0
		Iron, Total	3080		UG/L	90.0	1.0
		Mercury, Total	0.12	u	UG/L	0.12	2.0
		Potassium, Total	4070		UG/L	985	1.0
		Lithium, Total	7.9		UG/L	0.80	1.0
		Magnesium, Total	7790		UG/L	50.0	1.0
		Manganese, Total	236		UG/L	0.80	1.0
		Sodium, Total	14300		UG/L	40.0	1.0
		Nickel, Total	5.1		UG/L	4.0	1.0
		Lead, Total	6.0	u	UG/L	6.0	1.0
		Antimony, Total	6.0	u	UG/L	6.0	1.0
		Selenium, Total	12.0	u	UG/L	12.0	1.0
		Silicon, Total	513		UG/L	80.0	1.0
		Vanadium, Total	2.8	u	UG/L	2.8	1.0
		Zinc, Total	12.0	u	UG/L	12.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/22/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0206-MB1	Silver, Total	1.0	u	UG/L	1.0	1.0
		Aluminum, Total	40.0	u	UG/L	40.0	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Barium, Total	1.0	u	UG/L	1.0	1.0
		Beryllium, Total	0.50	u	UG/L	0.50	1.0
		Calcium, Total	40.0	u	UG/L	40.0	1.0
		Cadmium, Total	0.50	u	UG/L	0.50	1.0
		Chromium, Total	2.0	u	UG/L	2.0	1.0
		Copper, Total	2.0	u	UG/L	2.0	1.0
		Iron, Total	46.1		UG/L	45.0	1.0
		Potassium, Total	493	u	UG/L	493	1.0
		Lithium, Total	0.47		UG/L	0.40	1.0
		Magnesium, Total	25.0	u	UG/L	25.0	1.0
		Manganese, Total	0.50		UG/L	0.40	1.0
		Sodium, Total	20.0	u	UG/L	20.0	1.0
		Nickel, Total	2.0	u	UG/L	2.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		Antimony, Total	3.0	u	UG/L	3.0	1.0
		Selenium, Total	6.0	u	UG/L	6.0	1.0
		Silicon, Total	40.0	u	UG/L	40.0	1.0
		Vanadium, Total	1.4	u	UG/L	1.4	1.0
		Zinc, Total	6.0	u	UG/L	6.0	1.0
BLANK1	08C0086-MB1	Mercury, Total	0.06	u	UG/L	0.06	1.0
BLANK2	08C0086-MB2	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
BLANK3	08C0086-MB3	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/22/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16VJ9	Silver, Total	104	2.0 u	100	104.4	1.0
		Aluminum, Total	3950	80.0 u	4000	98.7	1.0
		Arsenic, Total	4150	10.0 u	4000	103.8	1.0
		Barium, Total	4100	4.0	4000	102.4	1.0
		Beryllium, Total	103	1.0 u	100	102.7	1.0
		Calcium, Total	83700	36100	50000	95.3	1.0
		Cadmium, Total	103	1.0 u	100	102.6	1.0
		Chromium, Total	414	4.0 u	400	103.4	1.0
		Copper, Total	519	4.0 u	500	103.8	1.0
		Iron, Total	4800	3080	2000	85.9	1.0
		Mercury, Total	1.9	0.12u	2.0	96.9	2.0
		Potassium, Total	52900	4070	50000	97.6	1.0
		Lithium, Total	2190	7.9	2000	109.0	1.0
		Magnesium, Total	57300	7790	50000	99.0	1.0
		Manganese, Total	1250	236	1000	101.0	1.0
		Sodium, Total	62300	14300	50000	95.9	1.0
		Nickel, Total	1020	5.1	1000	101.7	1.0
		Lead, Total	1030	6.0 u	1000	102.9	1.0
		Antimony, Total	1030	6.0 u	1000	102.6	1.0
		Selenium, Total	3670	12.0 u	4000	91.9	1.0
		Silicon, Total	2400	513	2000	94.5	1.0
		Vanadium, Total	997	2.8 u	1000	99.7	1.0
		Zinc, Total	1030	12.0 u	1000	102.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/22/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16VJ9	Silver, Total	2.0 u	2.0 u	NC	1.0
		Aluminum, Total	80.0 u	80.0 u	NC	1.0
		Arsenic, Total	10.0 u	10.0 u	NC	1.0
		Barium, Total	4.0	3.5	13.3	1.0
		Beryllium, Total	1.0 u	1.0 u	NC	1.0
		Calcium, Total	36100	35200	2.5	1.0
		Cadmium, Total	1.0 u	1.0 u	NC	1.0
		Chromium, Total	4.0 u	4.0 u	NC	1.0
		Copper, Total	4.0 u	4.0 u	NC	1.0
		Iron, Total	3080	2960	3.9	1.0
		Mercury, Total	0.12u	0.12u	NC	2.0
		Potassium, Total	4070	3540	14.1	1.0
		Lithium, Total	7.9	6.7	16.4	1.0
		Magnesium, Total	7790	7510	3.7	1.0
		Manganese, Total	236	228	3.4	1.0
		Sodium, Total	14300	13800	4.0	1.0
		Nickel, Total	5.1	6.6	25.6	1.0
		Lead, Total	6.0 u	6.0 u	NC	1.0
		Antimony, Total	6.0 u	6.0 u	NC	1.0
		Selenium, Total	12.0 u	12.0 u	NC	1.0
		Silicon, Total	513	488	5.1	1.0
		Vanadium, Total	2.8 u	2.8 u	NC	1.0
		Zinc, Total	12.0 u	12.0 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/22/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0206-LC1	Silver, LCS	491	500	UG/L	98.3
		Aluminum, LCS	4970	5000	UG/L	99.4
		Arsenic, LCS	9820	10000	UG/L	98.2
		Barium, LCS	4940	5000	UG/L	98.9
		Beryllium, LCS	247	250	UG/L	98.8
		Calcium, LCS	25200	25000	UG/L	100.9
		Cadmium, LCS	244	250	UG/L	97.6
		Chromium, LCS	492	500	UG/L	98.5
		Copper, LCS	1240	1250	UG/L	98.8
		Iron, LCS	4980	5000	UG/L	99.6
		Potassium, LCS	23700	25000	UG/L	95.0
		Lithium, LCS	5120	5000	UG/L	102.4
		Magnesium, LCS	24200	25000	UG/L	96.7
		Manganese, LCS	736	750	UG/L	98.2
		Sodium, LCS	23900	25000	UG/L	95.7
		Nickel, LCS	1970	2000	UG/L	98.3
		Lead, LCS	2460	2500	UG/L	98.5
		Antimony, LCS	2920	3000	UG/L	97.5
		Selenium, LCS	9860	10000	UG/L	98.6
		Silicon, LCS	4650	5000	UG/L	93.0
		Vanadium, LCS	2410	2500	UG/L	96.2
		Zinc, LCS	988	1000	UG/L	98.8
LCS1	08C0086-LC1	Mercury, LCS	5.1	5.0	UG/L	102.7

Lionville Laboratory Incorporated

Logbook #: 135

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0206
Date/Time Initiated: 5/20/08 1000
Date/Time Completed: 5/20/08 1530 1330
Analyst(s): MW U.E.
Matrix: Soil Water Other: MW 5/20/08
Instr. Type: AA ICP
Parameters: See backlog

Digested / Undigested (circle one)
Balance #: N/A
Balance Cal Verif: Y NA
Hot Plate Temp: 95°

Method: SW (circle)

3005A	DW	200.7 (1994)
3010A		200.9
3015		3113B
3020A		
7060A (As/Se)	MCAWW	200.7 (1982)
7760A (Ag)		200 (AA)
		206.2 (As/Se)
3050B		
3051	SM	3030C (NC)
CLP ILMO3.0	Other	teflon
ILMO4.0		

TW/Stoller

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
0805L097-001		50ml	100ml	~7	TO	N/A	slightly brown, cloudy	limited volume	
001R		↓	↓	↓	↓	↓	↓		
001S	1.0ml	↓	↓	↓	↓	↓	↓		
0804L020-005	discarded	100ml		<2	↓	↓	clear/colorless		
016	MW 5/21/08	↓	↓	↓	↓	↓	↓		
08L0206-MB1		↓	↓	↓	↓	↓	↓		
LC1	1.0ml	↓	↓	↓	↓	↓	↓		

MW 5/20/08

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

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2
1:1 HNO_3
1:1 HCL

File ID#: IC020601 IC020602

LIMS Transfer: Y N Updated

Data Review By/Date: 5/22/08

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: CB
Date 5/15/08
Start Time/Temp: 1235 | 98°
End Time/Temp: 1435 | 95°

Instrument ID HG-3.1 | 3.2
Balance #: (NA)
Pipette Calibration (Daily) Y ✓

Prep Batch: 0805008b
Worksheet: HG05159/02
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	G12			33mL	33mL	
0.2 ug/L	92	0.0667				
1.0	500	0.334				
2.0	508	0.667				
5.0	NR	1.667				
10.0	X3	3.334				
ICV	PC	0.0834	2.5			
CCV	N60	0.167	5.0			
ICB/CCB	PT					
MB1	A94					PBW1186
LC1	WK	0.167	5.0			LCSW1186
0805L068-001	95					
002	SPRT					
003	SS					
004	AB					
005	JS					
0805L085-001	CB2					
001R	461					
001S	H3	0.334	1.0			
001T	154	0.334	1.0			
002	X5					
004	CT					
*0805L097-001	857			16.5mL		dilution matrix
001R	HR					
001S	N2	0.334	1.0			
0805L033-009	PA			33mL		
009R	503					

Standard:	ID	Prep Date/Time
ICAL/MS	RI 6072-78-14B	5/15/08 1015
ICV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 5/20

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

* pH ~2, Acidified in tube
Teo 5/15/08

Page #:

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Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: EB
Date 5/15/08
Start Time/Temp: See page 007
End Time/Temp:

Instrument ID HG3.1/3.2
Balance #: (NA)
Pipette Calibration (Daily) Y ✓

Prep Batch: 08CD086
Worksheet: HG05,501/02
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
08051033-0095	BLV	0.334	1.0	33mL	33mL	
010	AHA					
~~08051033-~~ * ~~08051114-001~~ 011	WD					
0115	HH	0.667	200			
012	AG01					
013	R2					
08051052-003	76			16.5mL		dil. due to bubbles
003R	B14					
003S	B32	0.667	200			
08051053-002	PF			33mL		R
002R	N4					
002S	2B	0.667	200			
08LT0041-LB1	3T					

EB 5/15/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 007	

Reviewed By/Date: [signature] 5/20/0

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

*Sample chain lists as other liquid, however it is solid. EB 5/15/08

Page #:

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nville Laboratory Use Only

'805L097

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAF# RC-062

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager OJohnson

SW846 Del STD TAT 15 days

e Rec'd 5-9-08 Date Due 5-24-08

		A	B	C			D		E		F	G	H	I	J	K
Refrigerator #		6	3	3			6		3		3	3	3	3	3	3
#/Type Container	Liquid	1G	1G	1G			1G		1G		1G	1G	1G	1G	1G	1G
	Solid															
Volume			950	950			125		500		250	250	125	125	125	125
Preservatives		—	—	—			—		—		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb		TOC		TCP Metal	CN	TSS	TDS	PH	Sulfate	Sulfide	Sulfite

RIX
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	8260 4H	8260 5H	8260 PCB			IOCT		Metal		ITSS	ITDS	IPH	IIGN	ISSFD	INH3N
001	J16VJ9	/	/	W	5-7-08	1330	X	X	X			X		X		X	X	X	X	X	X

Lionville Laboratory Use Only

cial Instructions:

metal ① = HSL + Si, Li
NO Co, TL

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/9/08	1025

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 1 of 2

lector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
lect Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
nned To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

ID, Lead

ecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C
Type of Container	Gs*	aG	aG	G/P	P	G/P	G/P	G	G/P	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume Rec 5/6/08	40mL	1000mL	1000mL	~~300mL~~ 500mL	~~50mL~~ 125mL	~~30g~~ 125mL	~~100mL~~ 125mL	~~75mL~~ 125mL	~~150mL~~ 250mL	~~40mL~~ 125mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	pH (Water) - 9040	Sulfides - 9030	Ammonia - 350.3 (Nitrogen in ammonia)	Ignitability - 1010	TDS - 160.1	TOC - 415.1
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample No.	Matrix *	Sample Date	Sample Time										
6VJ9	OTHER LIQUID	5-7-08	13:30	X	X	X	X	X	X	X	X	X	X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
m Holeman	5-7-08 14:15	TA Lee Dmofgtz	5-7-08/1415
A Lee Dmofgtz	5-7-08/1515	1060 CB	5-7-08/1515
1060/CB	0900 MAY 0 8 2008	0900 MSTankovich	MAY 0 8 2008
WCH MSTankovich	0900 MAY 0 8 2008		FedEx
FedEx	5-9-08 1025	V. Hernandez	5-9-08 1025
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

Matrix *

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

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

CH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2
ector Ron Holeman	Company Contact: Tim Lee; Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K; Data Turnaround: 15 Days
ject Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2; COA: see below	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

ID, Lead

ecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	None	None	None	None	None	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	250mL	500mL	500mL	1000mL	5g	500mL	60mL				
SAMPLE ANALYSIS	TSS - 160.2 ✓	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen				
Sample No.	Matrix *	Sample Date	Sample Time								
6VJ9	OTHER LIQUID	5-7-08	13:30	X							

CHAIN OF POSSESSION	Sign/Print Names		
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
n Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Alex Smotzer	5-7-08/1515	1060 IB	5-7-08/1515
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
160/IB 0900	MAY 0 8 2008	MSt Markovich	MAY 0 8 2008
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
WCH MSt Markovich 0900	MAY 0 8 2008		FedEx
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	5-9-08 1025		5-9-08 1025
nquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Antimony-125, Barium-133, Radium-226, Radium-228)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

Matrix *

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

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

CH-EE-011

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-042

Date: 5/9/08

LvLI Batch #: 0805L097

Sample Custodian: K Kennedy

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7910624260 14
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 3-4	°C	Cooler # SML-495
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 PH	
Short holds taken to wet lab?	☑ Yes	☐ No	☐ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI LIONVILLE LABORATORY INC

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-042 K1220

DATE RECEIVED: 05/09/08 LVL LOT # :0805L097

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
J16VJ9							
IGNITABILITY	001	W	08LFP011	05/07/08	05/19/08	05/19/08	
AMMONIA	001	W	08LAM012	05/07/08	05/12/08	05/12/08	
AMMONIA	001 REP	W	08LAM012	05/07/08	05/12/08	05/12/08	
TOTAL ORGANIC CARBON	001	W	08LTC009	05/07/08	05/28/08	05/28/08	
TOTAL ORGANIC CARBON	001 REP	W	08LTC009	05/07/08	05/28/08	05/28/08	
TOTAL ORGANIC CARBON	001 MS	W	08LTC009	05/07/08	05/28/08	05/28/08	
PH	001	W	08LPH023	05/07/08	05/12/08	05/12/08	1156
PH	001 REP	W	08LPH023	05/07/08	05/12/08	05/12/08	1158
SULFIDE	001	W	08LSD037	05/07/08	05/12/08	05/12/08	
SULFIDE	001 REP	W	08LSD037	05/07/08	05/12/08	05/12/08	
TOTAL DISSOLVED SOLI	001	W	08LSSA36	05/07/08	05/12/08	05/12/08	
TOTAL DISSOLVED SOLI	001 REP	W	08LSSA36	05/07/08	05/12/08	05/12/08	
TOTAL SUSPENDED SOLI	001	W	08LSS036	05/07/08	05/12/08	05/12/08	
TOTAL SUSPENDED SOLI	001 REP	W	08LSS036	05/07/08	05/12/08	05/12/08	

LAB QC:

IGNITEABILITY	MB1 BS	W	08LFP011	N/A	05/23/08	05/23/08
AMMONIA	MB1	W	08LAM012	N/A	05/12/08	05/12/08
AMMONIA	MB1 BS	W	08LAM012	N/A	05/12/08	05/12/08
AMMONIA	MB1 BSD	W	08LAM012	N/A	05/12/08	05/12/08
TOTAL ORGANIC CARBON	MB1	W	08LTC009	N/A	05/28/08	05/28/08
TOTAL ORGANIC CARBON	MB1 BS	W	08LTC009	N/A	05/28/08	05/28/08
SULFIDE	MB1	W	08LSD037	N/A	05/12/08	05/12/08
SULFIDE	MB1 BS	W	08LSD037	N/A	05/12/08	05/12/08
SULFIDE	MB1 BSD	W	08LSD037	N/A	05/12/08	05/12/08
TOTAL DISSOLVED SOLI	MB1	W	08LSSA36	N/A	05/12/08	05/12/08
TOTAL DISSOLVED SOLI	MB1 BS	W	08LSSA36	N/A	05/12/08	05/12/08
TOTAL DISSOLVED SOLI	MB1 BSD	W	08LSSA36	N/A	05/12/08	05/12/08
TOTAL SUSPENDED SOLI	MB1	W	08LSS036	N/A	05/12/08	05/12/08
TOTAL SUSPENDED SOLI	MB1 BS	W	08LSS036	N/A	05/12/08	05/12/08
TOTAL SUSPENDED SOLI	MB1 BSD	W	08LSS036	N/A	05/12/08	05/12/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-042 K1220
LVL#: 0805L097

W.O.#: 11343-606-001-9999-00
Date Received: 05-09-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.

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

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

3. Sample holding times as required by the method and/or contract were met with the exceprtion of pH that was received past hold (see the sample chronology summary for analyses times for short hold samples).

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of pH as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits and method criteria. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recovery for Total Organic Carbons was within the 75-125% control limits.

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

9. Insufficient sample volume was provided so as to perform matrix spike analyses for Ammonia, Sulfide and Ignitability.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

6/10/08
Date

njp\i05-097

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 14 pages.

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	EPA /600	SW846	OTHER
Acidity	___ 305.1		
___Alkalinity ___Bicarbonate ___Carbonate	___ 310.1		
BOD	___ 405.1		___ 5210B (b)
Ion Chromatography:			
___Bromide ___Chloride ___Fluoride	___ 300.0	___ 9056	
___Nitrate ___Nitrite ___Phosphate	___ 300.0	___ 9056	
___Sulfate ___Formate ___Acetate ___Oxalate	___ 300.0	___ 9056	
Chloride	___ 325.2	___ 9251	
Chorine, Residual	___ 330.5 (mod)		
Cyanide, Amenable to Chlorination	___ 335.2	___ 9010B	
Cyanide, Total	___ 335.2	___ 9010B ___ 9014	___ ILMO4.0 (e)
Cyanide, Weak Acid Dissociable		___	___ 412 (a) ___ 4500CN-I
COD	___ 410.4(mod)		___ 5220C (b)
Color	___ 110.2		
Corrosivity by Coupon		___ 1110(mod)	
Chromium VI		___ 7196A	___ 3500Cr-D (b)
Fluoride	___ 340.2		___ 4500-FC
Hardness, Calcium	___ 215.2		
Hardness, Total	___ 130.2		
Iodide			___ ASTM D19P202 (1)
Surfactant	___ 425.1		
___Nitrate-Nitrite ___Nitrate ___Nitrite	___ 353.2		
Ammonia	✓ 350.3		
Total___Kjeldahl ___ Organic Nitrogen	___ 351.3		
Total ✓ Organic ___ Inorganic Carbon	✓ 415.1	___ 9060	
Oil & Grease	___ 413.1	___ 9070	
✓ pH ___ pH; paper	___ 150.1	✓ 9040B ___ 9041A	
Petroleum Hydrocarbons, Total Recoverable	___ 418.1		
Phenol	___ 420.1 ___ 420.2	___ 9065 ___ 9066	
___Ortho ___Total Phosphate	___ 365.2		___ 4500-P B ___ C
Salinity			___ 210A (a) ___ 2520 (b)
Settleable Solids	___ 160.5		
Sulfide	___ 376.1	✓ ~~9030B~~/9034 (acid soluble) HP 6-8-08	
Reactive ___Cyanide ___Sulfide		___ Section 7.3 (___9014___9030B)	
Silica	___ 370.1		
Sulfite	___ 377.1		
Sulfate	___ 375.4	___ 9038	
Specific Conductance	___ 120.1	___ 9050A	
Specific Gravity			___ D5057-90 ___ 213E (a
Synthetic Precipitation Leach		1312	
Total ✓Dissolved ✓Suspended ___Solids	160 ✓.1	✓.2 ___.3	
Total Organic Halides	___ 450.1	___ 9020B	
Turbidity	___ 180.1		
Volatile Solids:			
__Total __Dissolved __Suspended	___ 160.4		

Other: Ignitability **Method:** SW 1010

L-WI-034/A-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: TNU-HANFORD RC-042 K1220
LVL#: 0705L097

W.O.#: 11343-606-001-9999-00
Date Received: 05-09-07

Analyte:	**Observation:**
Ignitability	Sample J16VJ9 did not ignite. Sample was heated to approximately 220°F. p-Xylene was used to determined the accuracy of the flash point apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 81°F.

njp\i05-097.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 06/10/08

CLIENT: TNUHANFORD RC-042 K1220

LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16VJ9	Ammonia, as N	0.70	MG/L	0.10	1.0
		Total Organic Carbon	17.2	MG/L	2.5	5.0
		pH	7.0	PH UNIT	0.01	1.0
		Sulfide	4.0 u	MG/L	4.0	1.0
		Total Dissolved Solids	249	MG/L	5.00	1.0
		Total Suspended Solids	5.00 u	MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/10/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LAM012-MB1	Ammonia, as N	0.10 u	MG/L	0.10	1.0
BLANK10	08LTC009-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
BLANK10	08LSD037-MB1	Sulfide	1.0 u	MG/L	1.0	1.0
BLANK10	08LSSA36-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	08LSS036-MB1	Total Suspended Solids	5.00 u	MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 06/10/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16VJ9	Total Organic Carbon	40.6	17.2	25.0	93.8	5.0
BLANK10	08LAM012-MB1	Ammonia, as N	2.0	0.10u	2.0	99.5	1.0
		Ammonia, as N MSD	2.0	0.10u	2.0	99.5	1.0
BLANK10	08LTC009-MB1	Total Organic Carbon	4.9	0.50u	5.0	97.8	1.0
BLANK10	08LSD037-MB1	Sulfide	13.3	1.0 u	13.4	99.0	1.0
		Sulfide MSD	13.3	1.0 u	13.4	99.0	1.0
BLANK10	08LSSA36-MB1	Total Dissolved Solids	96.0	5.00u	100	96.0	1.0
		Total Dissolved Solids	99.0	5.00u	100	99.0	1.0
BLANK10	08LSS036-MB1	Total Suspended Solids	97.0	5.00u	100	97.0	1.0
		Total Suspended Solids	94.0	5.00u	100	94.0	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 06/10/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	08LAM012-MB1	Ammonia, as N	99.5	99.5	0.00
BLANK10	08LSD037-MB1	Sulfide	99.0	99.0	0.00
BLANK10	08LSSA36-MB1	Total Dissolved Solids	96.0	99.0	3.1
BLANK10	08LSS036-MB1	Total Suspended Solids	97.0	94.0	3.1

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 06/10/08

CLIENT: TNUHANFORD RC-042 K1220 LVL LOT #: 0805L097

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16VJ9	Ammonia, as N	0.70	0.71	1.3	1.0
		Total Organic Carbon	17.2	17.3	0.89	5.0
		pH	7.0	6.9	1.1	1.0
		Sulfide	4.0 u	4.0 u	NC	1.0
		Total Dissolved Solids	249	265	6.2	1.0
		Total Suspended Solids	5.00u	5.00u	NC	1.0

nville Laboratory Use Only

805L097

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000011

nt TNU HANFORD SAF# RC-062

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

vville Laboratory Project Manager OJohnson

SW846 Del STD. TAT 15 days

Rec'd 5-9-08 Date Due 5-24-08

		A	B	C			D		E		F	G	H	I	J	K
Refrigerator #		6	3	3			6		3		3	3	3	3	3	3
#/Type Container	Liquid	1G	1G	1G			1G		1G		1G	1G	1G	1G	1G	1G
	Solid															
Volume			950	950			125		500		250	250	125	125	125	125
Preservatives		—	—	—			—		—		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb		TOC		TCLP Metal Hg	CN	TSS	TDS	pH			

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260 H	8625 H	OPCB			TOCT		Metal		ITSS	ITDS	IPH	IIGN	ISFD	INH3N
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J16VJ9"	/	/	W	5-7-08	1330	X	X	X			X		X		X	X	X	X	X	X

Lionville Laboratory Use Only

cial Instructions:

metal ① = HSL + Si, Li
NO Co, TL

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/9/08	1025

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-042-036	Page 1 of 2

lector Ron Holeman	Company Contact: Tim Lee Telephone No.: 627-8639	Project Coordinator: KESSNER, JH	Price Code: 9K Data Turnaround: 15 Days
lect Designation: 00 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location: 327 - RPS Drums	SAF No.: RC-042	
Chest No.: SML-495	Field Logbook No.: EL-1603-2 COA: see below	Method of Shipment: FedEx	
pped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080246	Bill of Lading/Air Bill No.: see ospc	

000000012

OSSIBLE SAMPLE HAZARDS/REMARKS

1D, Lead

pecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	Cool 4C	Cool 4C	None	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C
Type of Container	Gs*	aG	aG	G/P	P	G/P	G/P	G	G/P	G
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume Rec 5/6/08	40mL	1000mL	1000mL	~~300mL~~ 500mL	~~50mL~~ 125mL	~~30g~~ 125mL	~~100mL~~ 125mL	~~75mL~~ 125mL	~~150mL~~ 250mL	~~40mL~~ 125mL
SAMPLE ANALYSIS	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	pH (Water) - 9040	Sulfides - 9030	Ammonia - 350.3 (Nitrogen in ammonia)	Ignitability - 1010	TDS - 160.1	TOC - 415.1
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Sample No.	Matrix *	Sample Date	Sample Time										
3VJ9	OTHER LIQUID	5-7-08	13:30	X	X	X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: n Holeman	Date/Time: 5-7-08 14:15	Received By/Stored In: TA Lee Smoffer	Date/Time: 5-7-08/1415
Relinquished By/Removed From: A Lee Smoffer	Date/Time: 5-7-08/1515	Received By/Stored In: 1060 CB	Date/Time: 5-7-08/1515
Relinquished By/Removed From: 1060/CB 0900	Date/Time: MAY 08 2008	Received By/Stored In: 0900 mstankovich	Date/Time: MAY 08 2008
Relinquished By/Removed From: mstankovich 0900	Date/Time: MAY 08 2008	Received By/Stored In:	Date/Time: FedEx
Relinquished By/Removed From: FedEx	Date/Time: 5-9-08 1025	Received By/Stored In:	Date/Time: 5-9-08 1025
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time:

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

Matrix *

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

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

CH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-042-036	Page 2 of 2

llector Ron Holeman	Company Contact Tim Lee / Telephone No. 627-8639	Project Coordinator KESSNER, JH	Price Code 9K / Data Turnaround 15 Days
ıject Designation 300 Area D&D Waste Characterization Sampling - Other Liq	Sampling Location 327 - RPS Drums	SAF No. RC-042	
Chest No. SML-495	Field Logbook No. EL-1603-2 / COA see below	Method of Shipment FedEx	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080246	Bill of Lading/Air Bill No. See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

4D, Lead

pecial Handling and/or Storage

4°Cool

Preservation	Cool 4C	None	None	None	None	None	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P	G/P				
No. of Container(s)	1	1	1	1	1	1	1				
Volume	250mL	500mL	500mL	1000mL	5g	500mL	60mL				
SAMPLE ANALYSIS	TSS - 160.2 ✓	Gross Alpha	Gross Beta	See item (1) in Special Instructions.	Isotopic Plutonium	Isotopic Uranium	RCF GEA Shipping Screen				
Sample No.	Matrix *	Sample Date	Sample Time								
6VJ9	OTHER LIQUID	5-7-08	13:30	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
inquished By/Removed From: Ron Holeman	5-7-08 14:15	TA Lee	5-7-08/1415
inquished By/Removed From: Alex Smotzer	5-7-08/1515	1060 CB	5-7-08/1515
inquished By/Removed From: 1060 CB	0900 MAY 0 8 2008	0900 MSt-Markovich	MAY 0 8 2008
inquished By/Removed From: WCH MSt-Markovich	0900 MAY 0 8 2008	Received By/Stored In	Date/Time: FedEx
inquished By/Removed From: FedEx	5-9-08 1025	Received By/Stored In	5-9-08 1025
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Laboratory Analysis, Data Management & Shipping COA - RD4MXX2F00.

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

KW JM

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

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 5/9/08

Project/SAF/SOW/Release #: RC-042

LvLI Batch #: 0805L097

Sample Custodian: K Kennedy

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7910624260 14
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 3-4	°C	Cooler # SML-495
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 PH	
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 MB 6-8-08	☑ No	See #12
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.