



EBERLINE

SERVICES



March 1, 2005

Ms. Joan Kessner
Bechtel Hanford Inc.
3190 George Washington Way
MSIN H9-02
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R4-12-316-7216, SDG H2939

Dear Ms. Kessner:

Enclosed is the data report for two water samples designated under SAF No. B03-004 received at Eberline Services on December 30, 2004. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/mbr

Enclosure: *Data Package*

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H2939 was composed of two water samples designated under SAF No. B03-004 with a Project Designation of: ERDF – Full List Leachate Analysis.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-mail on March 1, 2005.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analyses

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Radium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 Total Uranium Analyses

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy Analyses

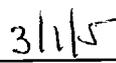
No problems were encountered during the course of the analyses.

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 C. Mannion
Senior Program Manager



Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_H2939

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

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N.J. Verville

Prepared by

Mel Mannion

Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 02/28/05

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_H2939

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.

REPORT GUIDES

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Form DVD-RG
Version 3.06
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SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_H2939

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.

REPORT GUIDES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
 Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG H2939

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB		CHAIN OF		COLLECTED
				SAMPLE ID	SAF NO	CUSTODY		
J02643	ERDF-200 West	WATER		R412316-01	B03-004	B03-004-5		12/28/04 10:15
J02644	ERDF-200 West	WATER		R412316-02	B03-004	B03-004-5		12/28/04 10:30
Method Blank		WATER		R412316-04	B03-004			
Lab Control Sample		WATER		R412316-03	B03-004			
Duplicate (R412316-01)	ERDF-200 West	WATER		R412316-05	B03-004			12/28/04 10:15
Spike (R412316-01)	ERDF-200 West	WATER		R412316-06	B03-004			12/28/04 10:15

SAMPLE SUMMARY

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
 Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG H2939

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7216	B03-004-5	J02643	WATER		8.93 L		12/30/04	2	R412316-01	7216-001
		J02644	WATER		8.93 L		12/30/04	2	R412316-02	7216-002
		Method Blank	WATER						R412316-04	7216-004
		Lab Control Sample	WATER						R412316-03	7216-003
		Duplicate (R412316-01)	WATER		8.93 L		12/30/04	2	R412316-05	7216-005
		Spike (R412316-01)	WATER		8.93 L		12/30/04	2	R412316-06	7216-006

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG H2939

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS	
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS		DUP/ORIG MS/ORIG
Beta Counting										
TC	WATER	Technetium 99 in Water	7121-104	10.0	2		1	1	1/1	
Gas Proportional Counting										
RAT	WATER	Total Alpha Radium in Water	7121-104	5.0	2		1	1	1/1	
Gas Proportional Counting										
93A	WATER	Gross Alpha in Water	7121-104	20.0	2		1	1	1/1	
93B	WATER	Gross Beta in Water	7121-104	15.0	2		1	1	1/1	
Gamma Scan										
GAM	WATER	Gamma Emitters	7121-104	15.0	2		1	1	1/1	
Gamma Spectroscopy										
I	WATER	Iodine 129 in Water	7121-104	5.0	2		1	1	1/1	
Kinetic Phosphorimetry (KPA)										
U_T	WATER	Uranium, Total in Water	7121-104	9.0	2		1	1	1/1	
Liquid Scintillation Counting										
C	WATER	Carbon 14 in Water	7121-104	10.0	2		1	1	1/1	1/1 X

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.

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SAMPLE DELIVERY GROUP H2939

SDG 7216
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Case no SDG H2939

WORK SUMMARY

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED			SUF-					
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
J02643		R412316-01	7216-001	93A/93		01/22/05	01/23/05	MWT	Gross Alpha in Water	
ERDF-200 West	WATER	12/28/04	7216-001	93B/93		01/22/05	01/23/05	MWT	Gross Beta in Water	
303-004-5	B03-004	12/30/04	7216-001	C		02/12/05	02/17/05	MWT	Carbon 14 in Water	
			7216-001	GAM		02/14/05	02/15/05	CSS	Gamma Emitters	
			7216-001	I		02/24/05	02/26/05	MWT	Iodine 129 in Water	
			7216-001	RAT		02/11/05	02/13/05	MWT	Total Alpha Radium in Water	
			7216-001	TC		02/14/05	02/16/05	MWT	Technetium 99 in Water	
			7216-001	U_T		02/03/05	02/14/05	MWT	Uranium, Total in Water	
J02644		R412316-02	7216-002	93A/93		01/22/05	01/23/05	MWT	Gross Alpha in Water	
ERDF-200 West	WATER	12/28/04	7216-002	93B/93		01/22/05	01/23/05	MWT	Gross Beta in Water	
303-004-5	B03-004	12/30/04	7216-002	C		02/12/05	02/17/05	MWT	Carbon 14 in Water	
			7216-002	GAM		02/15/05	02/15/05	CSS	Gamma Emitters	
			7216-002	I		02/24/05	02/26/05	MWT	Iodine 129 in Water	
			7216-002	RAT		02/11/05	02/13/05	MWT	Total Alpha Radium in Water	
			7216-002	TC		02/14/05	02/16/05	MWT	Technetium 99 in Water	
			7216-002	U_T		02/03/05	02/14/05	MWT	Uranium, Total in Water	
Method Blank		R412316-04	7216-004	93A/93		01/21/05	01/23/05	MWT	Gross Alpha in Water	
	WATER		7216-004	93B/93		01/21/05	01/23/05	MWT	Gross Beta in Water	
	B03-004		7216-004	C		02/12/05	02/17/05	MWT	Carbon 14 in Water	
			7216-004	GAM		02/15/05	02/15/05	CSS	Gamma Emitters	
			7216-004	I		02/25/05	02/26/05	MWT	Iodine 129 in Water	
			7216-004	RAT		02/11/05	02/13/05	MWT	Total Alpha Radium in Water	
			7216-004	TC		02/15/05	02/16/05	MWT	Technetium 99 in Water	
			7216-004	U_T		02/03/05	02/14/05	MWT	Uranium, Total in Water	
Lab Control Sample		R412316-03	7216-003	93A/93		01/22/05	01/23/05	MWT	Gross Alpha in Water	
	WATER		7216-003	93B/93		01/22/05	01/23/05	MWT	Gross Beta in Water	
	B03-004		7216-003	C		02/12/05	02/17/05	MWT	Carbon 14 in Water	
			7216-003	GAM		02/13/05	02/15/05	CSS	Gamma Emitters	
			7216-003	I		02/24/05	02/26/05	MWT	Iodine 129 in Water	
			7216-003	RAT		02/08/05	02/13/05	MWT	Total Alpha Radium in Water	
			7216-003	TC		02/14/05	02/16/05	MWT	Technetium 99 in Water	
			7216-003	U_T		02/03/05	02/14/05	MWT	Uranium, Total in Water	

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SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2939

CLIENT SAMPLE ID	LAB SAMPLE ID				SUF-				
LOCATION	MATRIX	COLLECTED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
CUSTODY	SAF No	RECEIVED							
Duplicate (R412316-01)		R412316-05	7216-005	93A/93		01/22/05	01/23/05	MWT	Gross Alpha in Water
ERDF-200 West	WATER	12/28/04	7216-005	93B/93		01/22/05	01/23/05	MWT	Gross Beta in Water
	B03-004	12/30/04	7216-005	C		02/12/05	02/17/05	MWT	Carbon 14 in Water
			7216-005	GAM		02/14/05	02/15/05	CSS	Gamma Emitters
			7216-005	I		02/25/05	02/26/05	MWT	Iodine 129 in Water
			7216-005	RAT		02/11/05	02/13/05	MWT	Total Alpha Radium in Water
			7216-005	TC		02/14/05	02/16/05	MWT	Technetium 99 in Water
			7216-005	U_T		02/03/05	02/14/05	MWT	Uranium, Total in Water
Spike (R412316-01)		R412316-06	7216-006	C		02/12/05	02/17/05	MWT	Carbon 14 in Water
ERDF-200 West	WATER	12/28/04							
	B03-004	12/30/04							

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP	SPIKE	TOTAL
93A/93	B03-004	Gross Alpha in Water	900.0_ALPHABETA_GPC	2			1	1	1		5
93B/93	B03-004	Gross Beta in Water	900.0_ALPHABETA_GPC	2			1	1	1		5
C	B03-004	Carbon 14 in Water	C14_CHEM_LSC	2			1	1	1	1	6
GAM	B03-004	Gamma Emitters	GAMMA_GS	2			1	1	1		5
I	B03-004	Iodine 129 in Water	I129_SEP_LEPS_GS	2			1	1	1		5
RAT	B03-004	Total Alpha Radium in Water	RATOT_GPC	2			1	1	1		5
TC	B03-004	Technetium 99 in Water	TC99_TR_SEP_LSC	2			1	1	1		5
U_T	B03-004	Uranium, Total in Water	UTOT_KPA	2			1	1	1		5
TOTALS				16			8	8	8	1	41

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

R412316-03

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7216</u> Contact <u>Melissa C. Mannion</u>	Client/Case no <u>Hanford</u> SDG <u>H2939</u> Contract No. <u>630</u>
Lab sample id <u>R412316-03</u> Dept sample id <u>7216-003</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix _____ <u>WATER</u> SAF No <u>B03-004</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ LMDS	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST	pCi/L	pCi/L	%	(TOTAL)	LIMITS
Gross Alpha	145	13	<u>6.0</u>	3.0	93A	165	6.6	88	70-130	70-130
Gross Beta	155	8.0	<u>4.5</u>	4.0	93B	155	6.2	100	75-125	80-120
Carbon 14	16100	550	<u>240</u>	200	C	15900	640	101	83-117	80-120
Technetium 99	1020	24	6.1	15	TC	1090	44	94	84-116	80-120
Total Uranium (ug/L)	86.0	9.8	<u>0.21</u>	0.10	U_T	82.5	3.3	104	77-123	80-120
Total Radium	48.3	2.2	0.67	1.0	RAT	56.0	2.2	<u>86</u>	89-111	80-120
Iodine 129	461	7.4	<u>14</u>	5.0	I	464	19	99	90-110	80-120
Cobalt 60	484	21	11	25	GAM	456	18	106	74-126	80-120
Cesium 137	469	18	14	15	GAM	446	18	105	75-125	80-120

ERDF-Full List Leachate Analysis

QC-LCS 51528

Lab id <u>EBRLNE</u>
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Version <u>Ver 1.0</u>
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

R412316-05

J02643

DUPLICATE

SDG <u>7216</u> Contact <u>Melissa C. Mannion</u> DUPLICATE Lab sample id <u>R412316-05</u> Dept sample id <u>7216-005</u>	Client/Case no <u>Hanford</u> <u>SDG H2939</u> Contract No. <u>630</u> ORIGINAL Lab sample id <u>R412316-01</u> Dept sample id <u>7216-001</u> Received <u>12/30/04</u>
Client sample id <u>J02643</u> Location/Matrix <u>ERDF-200 West</u> <u>WATER</u> Collected/Volume <u>12/28/04 10:15</u> <u>8.93 L</u> Custody/SAF No <u>B03-004-5</u> <u>B03-004</u>	

ANALYTE	DUPLICATE		MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST	ORIGINAL		MDA pCi/L	QUALI- FIERS	RPD %	3σ TOT	PROT LIMIT
	pCi/L	2σ ERR (COUNT)					pCi/L	2σ ERR (COUNT)					
Gross Alpha	225	27	<u>16</u>	3.0		93A	232	27	<u>14</u>		3	49	
Gross Beta	525	14	<u>4.5</u>	4.0		93B	520	14	<u>4.6</u>		1	32	
Carbon 14	80.6	65	110	200	U	C	104	65	100		25	151	
Technetium 99	802	31	5.6	15		TC	805	22	5.6		0	22	
Total Uranium (ug/L)	944	110	<u>2.1</u>	0.10		U_T	953	110	<u>2.1</u>		1	31	
Total Radium	-0.190	0.21	0.30	1.0	U	RAT	0.193	0.19	0.41	U	-	-	
Iodine 129	1.21	1.5	3.2	5.0	U	I	0.288	1.2	2.6	U	-	-	
Potassium 40	U		170		U	GAM	U		270	U	-	-	
Cobalt 60	13.8	11	11	25		GAM	14.8	12	15	U	7	174	
Cesium 137	U		8.8	15	U	GAM	U		14	U	-	-	
Radium 226	U		16		U	GAM	U		23	U	-	-	
Radium 228	U		43		U	GAM	U		63	U	-	-	
Europium 152	U		24	50	U	GAM	U		38	U	-	-	
Europium 154	U		27	50	U	GAM	U		45	U	-	-	
Europium 155	U		31	50	U	GAM	U		48	U	-	-	
Thorium 228	U		13		U	GAM	U		21	U	-	-	
Thorium 232	U		43		U	GAM	U		63	U	-	-	
Uranium 235	U		54		U	GAM	U		63	U	-	-	
Uranium 238	U		1100		U	GAM	U		1800	U	-	-	
Americium 241	U		66		U	GAM	U		110	U	-	-	

ERDF-Full List Leachate Analysis

QC-DUP#1 51530

Lab id EBRLNE
 Protocol Hanford
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 Form DVD-DUP
 Version 3.06
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

R412316-06

J02643

MATRIX SPIKE

SDG <u>7216</u>	Client/Case no <u>Hanford</u>	SDG <u>H2939</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
MATRIX SPIKE	ORIGINAL	
Lab sample id <u>R412316-06</u>	Lab sample id <u>R412316-01</u>	Client sample id <u>J02643</u>
Dept sample id <u>7216-006</u>	Dept sample id <u>7216-001</u>	Location/Matrix <u>ERDF-200 West</u> <u>WATER</u>
	Received <u>12/30/04</u>	Collected/Volume <u>12/28/04 10:15</u> <u>8.93 L</u>
		Custody/SAF No <u>B03-004-5</u> <u>B03-004</u>

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LIMITS LIMITS
Carbon 14	88800	2900	<u>710</u>	200	X C	95700	3800	104	65	93	84-116 60-140

ERDF-Full List Leachate Analysis

QC-MS#1 51531

MATRIX SPIKES

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SUMMARY DATA SECTION

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Form <u>DVD-MS</u>
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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2939

R412316-01

J02643

DATA SHEET

SDG <u>7216</u>	Client/Case no <u>Hanford</u>	SDG <u>H2939</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R412316-01</u>	Client sample id <u>J02643</u>	
Dept sample id <u>7216-001</u>	Location/Matrix <u>ERDF-200 West</u>	<u>WATER</u>
Received <u>12/30/04</u>	Collected/Volume <u>12/28/04 10:15</u>	<u>8.93 L</u>
	Custody/SAF No <u>B03-004-5</u>	<u>B03-004</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Gross Alpha	12587-46-1	232	27	<u>14</u>	3.0		93A
Gross Beta	12587-47-2	520	14	<u>4.6</u>	4.0		93B
Carbon 14	14762-75-5	104	65	100	200		C
Technetium 99	14133-76-7	805	22	5.6	15		TC
Total Uranium (ug/L)	7440-61-1	953	110	<u>2.1</u>	0.10		U_T
Total Radium	ALPHA-RA	0.193	0.19	0.41	1.0	U	RAT
Iodine 129	15046-84-1	0.288	1.2	2.6	5.0	U	I
Potassium 40	13966-00-2	U		270		U	GAM
Cobalt 60	10198-40-0	14.8	12	15	25	U	GAM
Cesium 137	10045-97-3	U		14	15	U	GAM
Radium 226	13982-63-3	U		23		U	GAM
Radium 228	15262-20-1	U		63		U	GAM
Europium 152	14683-23-9	U		38	50	U	GAM
Europium 154	15585-10-1	U		45	50	U	GAM
Europium 155	14391-16-3	U		48	50	U	GAM
Thorium 228	14274-82-9	U		21		U	GAM
Thorium 232	TH-232	U		63		U	GAM
Uranium 235	15117-96-1	U		63		U	GAM
Uranium 238	U-238	U		1800		U	GAM
Americium 241	14596-10-2	U		110		U	GAM

ERDF-Full List Leachate Analysis

DATA SHEETS

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EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2939

R412316-02

J02644

DATA SHEET

SDG <u>7216</u>	Client/Case no <u>Hanford</u>	SDG <u>H2939</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R412316-02</u>	Client sample id <u>J02644</u>	
Dept sample id <u>7216-002</u>	Location/Matrix <u>ERDF-200 West</u>	<u>WATER</u>
Received <u>12/30/04</u>	Collected/Volume <u>12/28/04 10:30</u>	<u>8.93 L</u>
	Custody/SAF No <u>B03-004-5</u>	<u>B03-004</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALIFIERS	TEST
Gross Alpha	12587-46-1	277	29	<u>14</u>	3.0		93A
Gross Beta	12587-47-2	533	15	<u>4.9</u>	4.0		93B
Carbon 14	14762-75-5	57.7	61	100	200	U	C
Technetium 99	14133-76-7	858	23	6.2	15		TC
Total Uranium (ug/L)	7440-61-1	933	110	<u>2.1</u>	0.10		U_T
Total Radium	ALPHA-RA	-0.044	0.16	0.33	1.0	U	RAT
Iodine 129	15046-84-1	0.792	1.3	2.8	5.0	U	I
Potassium 40	13966-00-2	U		280		U	GAM
Cobalt 60	10198-40-0	14.9	10	11	25		GAM
Cesium 137	10045-97-3	U		14	15	U	GAM
Radium 226	13982-63-3	U		27		U	GAM
Radium 228	15262-20-1	U		59		U	GAM
Europium 152	14683-23-9	U		38	50	U	GAM
Europium 154	15585-10-1	U		49	50	U	GAM
Europium 155	14391-16-3	U		46	50	U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	TH-232	U		59		U	GAM
Uranium 235	15117-96-1	U		59		U	GAM
Uranium 238	U-238	U		1900		U	GAM
Americium 241	14596-10-2	U		99		U	GAM

ERDF-Full List Leachate Analysis

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test TC Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

METHOD SUMMARY

TECHNETIUM 99 IN WATER

BETA COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Technetium
Preparation batch 7121-104					
J02643	R412316-01			7216-001	805
J02644	R412316-02			7216-002	858
BLK (QC ID=51529)	R412316-04			7216-004	U
LCS (QC ID=51528)	R412316-03			7216-003	ok
Duplicate (R412316-01)	R412316-05			7216-005	ok

Nominal values and limits from method RDLs (pCi/L) 15
 ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 10.0 % Reference Lab Notebook 7121 pg. 104															
J02643	R412316-01			5.6	0.100			91		50			48	02/11/05	02/14 GRB-224
J02644	R412316-02			6.2	0.100			89		50			48	02/11/05	02/14 GRB-225
BLK (QC ID=51529)	R412316-04			5.4	0.100			95		50				02/11/05	02/15 GRB-228
LCS (QC ID=51528)	R412316-03			6.1	0.100			105		50				02/11/05	02/14 GRB-226
Duplicate (R412316-01)	R412316-05			5.6	0.100			92		50			48	02/11/05	02/14 GRB-228
	(QC ID=51530)														

Nominal values and limits from method 15 0.100 20-105 50 180

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2	
CP-008	Heavy Element Electroplating, rev 9	

AVERAGES ± 2 SD	MDA <u>5.8</u> ± <u>0.70</u>
FOR 5 SAMPLES	YIELD <u>94</u> ± <u>13</u>

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test RAT Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL ALPHA RADIUM IN WATER
 GAS PROPORTIONAL COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Total Radium
Preparation batch 7121-104				
J02643	R412316-01		7216-001	U
J02644	R412316-02		7216-002	U
3LK (QC ID=51529)	R412316-04		7216-004	U
LCS (QC ID=51528)	R412316-03		7216-003	<u>LOW</u>
Duplicate (R412316-01)	R412316-05		7216-005	- U

Nominal values and limits from method RDLs (pCi/L) 1.0

ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 5.0 % Reference Lab Notebook 7121 pg. 104															
J02643	R412316-01			0.41	0.200			96	100				45 02/03/05	02/11	GAW-109
J02644	R412316-02			0.33	0.200			97	100				45 02/03/05	02/11	GAW-110
3LK (QC ID=51529)	R412316-04			0.41	0.200			97	100				02/03/05	02/11	GAW-111
LCS (QC ID=51528)	R412316-03			0.67	0.200			95	<u>53</u>				02/03/05	02/08	GAW-105
Duplicate (R412316-01)	R412316-05			0.30	0.200			96	100				45 02/03/05	02/11	GAW-112
	(QC ID=51530)														

Nominal values and limits from method 1.0 0.200 20-105 100 180

PROCEDURES REFERENCE RATOT_GPC
 DWP-880 Total Radium in Drinking Water, rev 0

AVERAGES ± 2 SD MDA 0.42 ± 0.29
 FOR 5 SAMPLES YIELD 96 ± 2

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Test 93A Matrix WATER
SDG 7216
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Gross Alpha
Preparation batch 7121-104				
J02643	R412316-01	93	7216-001	232
J02644	R412316-02	93	7216-002	277
BLK (QC ID=51529)	R412316-04	93	7216-004	U
LCS (QC ID=51528)	R412316-03	93	7216-003	ok
Duplicate (R412316-01)	R412316-05	93	7216-005	ok

Nominal values and limits from method RDLs (pCi/L) 3.0
SRDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 20.0 % Reference Lab Notebook 7121 pg. 104															
J02643	R412316-01	93	<u>14</u>	0.140				237	100				25	01/20/05	01/22 GRB-112
J02644	R412316-02	93	<u>14</u>	0.130				219	100				25	01/20/05	01/22 GRB-109
BLK (QC ID=51529)	R412316-04	93	<u>3.2</u>	0.130				62	100					01/20/05	01/21 GRB-210
LCS (QC ID=51528)	R412316-03	93	<u>6.0</u>	0.130				65	100					01/20/05	01/22 GRB-110
Duplicate (R412316-01) (QC ID=51530)	R412316-05	93	<u>16</u>	0.140				236	100				25	01/20/05	01/22 GRB-111

Nominal values and limits from method 3.0 0.130 5-250 100 180

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
CP-120 Gross Alpha and Gross Beta in Water, rev 6

AVERAGES ± 2 SD MDA 11 ± 11
FOR 5 SAMPLES RESIDUE 164 ± 184

METHOD SUMMARIES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test 93B Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG H2939

METHOD SUMMARY

GROSS BETA IN WATER
 GAS PROPORTIONAL COUNTING

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Gross Beta
Preparation batch 7121-104					
J02643	R412316-01	93		7216-001	520
J02644	R412316-02	93		7216-002	533
3LK (QC ID=51529)	R412316-04	93		7216-004	U
LCS (QC ID=51528)	R412316-03	93		7216-003	ok
Duplicate (R412316-01)	R412316-05	93		7216-005	ok

Nominal values and limits from method RDLs (pCi/L) 4.0
 ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 15.0 % Reference Lab Notebook 7121 pg. 104															
J02643	R412316-01	93		<u>4.6</u>	0.140			237	100				25	01/20/05	01/22 GRB-112
J02644	R412316-02	93		<u>4.9</u>	0.130			219	100				25	01/20/05	01/22 GRB-109
3LK (QC ID=51529)	R412316-04	93		<u>4.1</u>	0.130			62	100					01/20/05	01/21 GRB-210
LCS (QC ID=51528)	R412316-03	93		<u>4.5</u>	0.130			65	100					01/20/05	01/22 GRB-110
Duplicate (R412316-01) (QC ID=51530)	R412316-05	93		<u>4.5</u>	0.140			236	100				25	01/20/05	01/22 GRB-111

Nominal values and limits from method 4.0 0.130 5-250 100 180

PROCEDURES REFERENCE 900.0_ALPHABETA_GPC
 CP-120 Gross Alpha and Gross Beta in Water, rev 6

AVERAGES ± 2 SD MDA 4.5 ± 0.57
 FOR 5 SAMPLES RESIDUE 164 ± 184

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test GAM Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG H2939

METHOD SUMMARY

GAMMA EMITTERS
 GAMMA SCAN

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
Preparation batch 7121-104					
J02643	R412316-01		7216-001	U	U
J02644	R412316-02		7216-002	14.9	U
3LK (QC ID=51529)	R412316-04		7216-004	U	U
LCS (QC ID=51528)	R412316-03		7216-003	ok	ok
Duplicate (R412316-01)	R412316-05		7216-005	ok	U
Nominal values and limits from method RDLs (pCi/L) 25 15					
ERDF-Full List Leachate Analysis					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 15.0 % Reference Lab Notebook 7121 pg. 104																
J02643	R412316-01		<u>87</u>	0.500						304			48	01/17/05	02/14	MB,05,00
J02644	R412316-02		<u>79</u>	0.500						328			49	01/17/05	02/15	MB,05,00
3LK (QC ID=51529)	R412316-04		<u>72</u>	0.500						328				01/17/05	02/15	01,03,00
LCS (QC ID=51528)	R412316-03		<u>14</u>	0.500						973				01/17/05	02/13	MB,05,00
Duplicate (R412316-01) (QC ID=51530)	R412316-05		<u>55</u>	0.500						729			48	01/17/05	02/14	MB,05,00
Nominal values and limits from method 15 0.500 100 180																

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

AVERAGES ± 2 SD MDA 61 ± 58
 FOR 5 SAMPLES YIELD _____ ± _____

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test I Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

METHOD SUMMARY

IODINE 129 IN WATER
 GAMMA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Iodine 129
Preparation batch 7121-104				
J02643	R412316-01		7216-001	U
J02644	R412316-02		7216-002	U
3LK (QC ID=51529)	R412316-04		7216-004	U
LCS (QC ID=51528)	R412316-03		7216-003	ok
Duplicate (R412316-01)	R412316-05		7216-005	- U

Nominal values and limits from method RDLs (pCi/L) 5.0

ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 5.0 % Reference Lab Notebook 7121 pg. 104															
J02643	R412316-01		2.6	0.250				91	791	58	02/24/05	02/24	XSPEC-004		
J02644	R412316-02		2.8	0.250				88	792	58	02/24/05	02/24	XSPEC-002		
3LK (QC ID=51529)	R412316-04		3.7	0.250				94	603		02/24/05	02/25	XSPEC-004		
LCS (QC ID=51528)	R412316-03		<u>14</u>	0.250				90	792		02/24/05	02/24	XSPEC-016		
Duplicate (R412316-01)	R412316-05		3.2	0.250				90	603	59	02/24/05	02/25	XSPEC-002		
	(QC ID=51530)														

Nominal values and limits from method 5.0 0.250 20-105 300 100 180

PROCEDURES REFERENCE I129_SEP_LEPS_GS
 CP-024 Iodine-129, Sample Dissolution, rev 5
 CP-530 Iodine-129 Purification, rev 1

AVERAGES ± 2 SD MDA 5.3 ± 9.8
 FOR 5 SAMPLES YIELD 91 ± 4

METHOD SUMMARIES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

METHOD SUMMARY

URANIUM, TOTAL IN WATER
KINETIC PHOSPHORIMETRY (KPA)

Test U T Matrix WATER
SDG 7216
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Total Uranium
Preparation batch 7121-104					
J02643	R412316-01			7216-001	953
J02644	R412316-02			7216-002	933
BLK (QC ID=51529)	R412316-04			7216-004	U
LCS (QC ID=51528)	R412316-03			7216-003	ok
Duplicate (R412316-01)	R412316-05			7216-005	ok

Nominal values and limits from method RDLs (ug/L) 0.10
ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA ug/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7121-104 2σ prep error 9.0 % Reference Lab Notebook 7121 pg. 104																
J02643	R412316-01			<u>2.1</u>	0.0200								37	02/03/05	02/03	KPA-001
J02644	R412316-02			<u>2.1</u>	0.0200								37	02/03/05	02/03	KPA-001
BLK (QC ID=51529)	R412316-04			0.021	0.0200									02/03/05	02/03	KPA-001
LCS (QC ID=51528)	R412316-03			<u>0.21</u>	0.0200									02/03/05	02/03	KPA-001
Duplicate (R412316-01)	R412316-05			<u>2.1</u>	0.0200								37	02/03/05	02/03	KPA-001
(QC ID=51530)																

Nominal values and limits from method 0.10 0.0200 180

PROCEDURES REFERENCE UTOT_KPA
CP-044 Sample Preparation for Total Uranium by Kinetic Phosphorimetry, rev 6
CP-929 Calibration of the Kinetic Phosphorimeter, rev 9

AVERAGES ± 2 SD MDA 1.3 ± 2.2
FOR 5 SAMPLES YIELD _____ ± _____

METHOD SUMMARIES

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2939

Test C Matrix WATER
 SDG 7216
 Contact Melissa C. Mannion

METHOD SUMMARY

CARBON 14 IN WATER
 LIQUID SCINTILLATION COUNTING

Client Hanford
 Contract No. 630
 Contract SDG H2939

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Carbon 14
------------------	---------------	----------	----------	----------	-----------

Preparation batch 7121-104

J02643	R412316-01	7216-001		104	
J02644	R412316-02	7216-002		U	
BLK (QC ID=51529)	R412316-04	7216-004		U	
LCS (QC ID=51528)	R412316-03	7216-003		ok	
Duplicate (R412316-01)	R412316-05	7216-005		ok	U
Spike (R412316-01)	R412316-06	7216-006		ok	X

Nominal values and limits from method RDLs (pCi/L) 200

ERDF-Full List Leachate Analysis

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
------------------	---------------	----------	----------	-----------	--------	----------	------------	---------	-------	-----------	----------	-----------	-----------	------------	----------

Preparation batch 7121-104 2σ prep error 10.0 % Reference Lab Notebook 7121 pg. 104

J02643	R412316-01	100		0.0150				100		50		46	02/12/05	02/12	LSC-004
J02644	R412316-02	100		0.0150				100		50		46	02/12/05	02/12	LSC-004
BLK (QC ID=51529)	R412316-04	100		0.0150				100		50			02/12/05	02/12	LSC-004
LCS (QC ID=51528)	R412316-03	<u>240</u>		0.0150				100		<u>9</u>			02/12/05	02/12	LSC-004
Duplicate (R412316-01)	R412316-05	110		0.0150				100		50		46	02/12/05	02/12	LSC-004
(QC ID=51530)															
Spike (R412316-01)	R412316-06	<u>710</u>		<u>0.0100</u>				100		<u>2</u>		46	02/12/05	02/12	LSC-004
(QC ID=51531)															

Nominal values and limits from method 200 0.0150 50 180

PROCEDURES REFERENCE C14_CHEM_LSC
 CP-241 Carbon-14 in Aqueous Samples, rev 6

AVERAGES ± 2 SD MDA 230 ± 490
 FOR 6 SAMPLES YIELD 100 ± 0

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2939

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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Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 02/28/05

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2939

SDG 7216
Contact Melissa C. Mannion

R E P O R T G U I D E

Client Hanford
Contract No. 630
Case no SDG_H2939

P R E P A R A T I O N B A T C H S U M M A R Y

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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W O R K S U M M A R Y

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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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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D A T A S H E E T

- * 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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LAB CONTROL SAMPLE

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

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

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

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

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

2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
 - * The recovery is underlined if it is outside either of these ranges.

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 1. A fixed percentage specified in the protocol.

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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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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.

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METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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METHOD SUMMARY

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

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

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

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- * 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

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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.

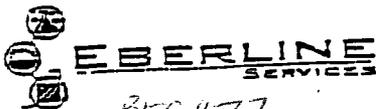
For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so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

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B03-004-5		Page 3 of 3				
Collector GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JI		Price Code 7N		Data Turnaround			
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		H2939 (7216)		SAF No. B03-004		Air Quality		45 Days			
Ice Chest No. <i>AFS 04.057/010</i>		Field Logbook No. <i>4A122904</i> EL <i>41621518-2</i>		COA <i>PERDFZ 2560</i>		Method of Shipment Federal Express							
Shipped To <u>EBERLINE SERVICES (Formerly TMA)</u> / <i>LVL1</i>		Offsite Property No. <i>A050 036</i>				Bill of Lading/Air Bill No. <i>SEE OSPC</i>							
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.		Preservation		Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2	
		Type of Container		aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
		No. of Container(s)		2	1	1	1	2	1	1	4	1	
		Volume		1000mL	60mL	125mL	1000mL	1000mL	100mL	250mL	1000mL	1000mL	
SAMPLE ANALYSIS		Nitrosamines - 8070	See item <i>11</i> in Special Instructions. <i>DAD 12/21/04</i>	Carbon-14	See item <i>12</i> in Special Instructions. <i>D/A 12/21/04</i>	Gross Alpha, Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium			
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12 25 04</i>	<i>1015</i>		X	X	X	X	X	X	X		
J02644	WATER	<i>12 28 04</i>	<i>1015 30</i>		X	X	X	X	X	X	X		
J02645	WATER		<i>DAD 122604</i>										
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS <i>DAD 12/21/04</i> 4X IC Anions - 300.0 ; Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate; 5X Gamma Spec - Add-on ; Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155;					
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
<i>S. GALE</i>		<i>12/25/04 1330</i>		<i>REF 2A</i>		<i>12/25/04 1330</i>							
<i>REF 2A</i>		<i>12/29/04 1000</i>		<i>S. GALE</i>		<i>12/29/04 1000</i>							
<i>S. GALE</i>		<i>12/29/04 1000</i>		<i>FED EX</i>									
<i>FED EX</i>		<i>12/30/04 10:00</i>		<i>F. K. HOGAN</i>		<i>12/30/04 10:00</i>							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By				Title				Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time			

RICHMOND, CA LABORATORY



SAMPLE RECEIPT CHECKLIST

Client: Floor - Hanford City: Richland State: WA

Date/Time received: 12-30-04 10:00 CoC No.: B03-004-5

Container I.D. No.: 2 Coolers AFS-04-010 AFS-04-057 Requested TAT (Days): 45 P.O. Received Yes [] No [X]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [X] No [] N/A []
3. Custody seals on sample containers intact? Yes [X] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [X] No [] N/A []
5. Packing material is: Wet [] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix: Water
7. Number of containers per sample: 11 (Or see CoC _____)
8. Samples are in correct container Yes [X] No []
9. Paperwork agrees with samples? Yes [] No [X]
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 [X] Not preserved [X] pH _____ Preservative: HCl/HNO3
13. Describe any anomalies: 125 mL glass bottle, sample # J02643 for C-4
Analysis has no collection time, C.C. is okay. ALSO
Not all preserved samples test to pH 2 or less (Label)
14. Was P.M. notified of any anomalies? Yes [X] No [] Date: 12-30-04
15. Inspected by: Z Kloppe Date: 12-30-04 Time: 10:00

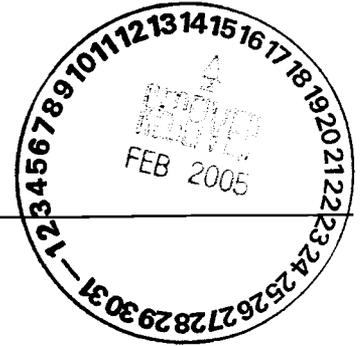
Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe
<u>All J02644 Preserved Samples < 2 pH</u>							
<u>Only 1 of the J02643 preserved samples (Tc99) < 2 pH, rest = pH 7</u>							
<u>Preserve samples for Joan Resner, BHI</u>							
<u>ALM # 11315</u>							

Called about

Ion Chamber Ser. No. _____ Calibration date _____
 Alpha Meter Ser. No. _____ Calibration date _____
 Beta/Gamma Meter Ser. No. _____ Calibration date _____



14 February 2005



Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

**Subject: Contract No. 630
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 #	0412L521
SDG #	H2939
SAF #	B03-004
Date Received	12-29-04
# Samples	2
Matrix	WATER
Volatiles	
Semivolatiles	
Pest/PCB	
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated


Orlette S. Johnson
Project Manager

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



Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/29/04

LVL LOT # :0412L521

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	<i>ANALYSIS TIME</i>
---------------------	-------	-----	--------	------------	-----------	----------	--------------------------

J02643

BROMIDE BY IC	001	W	04LICB73	12/28/04	12/29/04	12/30/04	
BROMIDE BY IC	001 REP	W	04LICB73	12/28/04	12/29/04	12/30/04	
BROMIDE BY IC	001 MS	W	05LIC001	12/28/04	01/10/04	01/10/04	
CHLORIDE BY IC	001	W	04LIC073	12/28/04	12/29/04	12/29/04	
CHLORIDE BY IC	001 REP	W	04LIC073	12/28/04	12/29/04	12/29/04	
CHLORIDE BY IC	001 MS	W	04LIC073	12/28/04	12/29/04	12/29/04	
FLUORIDE BY IC	001	W	04LICB73	12/28/04	12/29/04	12/30/04	
FLUORIDE BY IC	001 REP	W	04LICB73	12/28/04	12/29/04	12/30/04	
FLUORIDE BY IC	001 MS	W	05LIC001	12/28/04	01/10/04	01/10/04	
NITRITE BY IC	001	W	04LICB73	12/28/04	12/29/04	12/30/04	1105
NITRITE BY IC	001 REP	W	04LICB73	12/28/04	12/29/04	12/30/04	1120
NITRITE BY IC	001 MS	W	05LIC001	12/28/04	01/10/04	01/10/04	1541
NITRATE BY IC	001	W	04LICB73	12/28/04	12/29/04	12/29/04	1554
NITRATE BY IC	001 REP	W	04LICB73	12/28/04	12/29/04	12/29/04	1610
NITRATE BY IC	001 MS	W	04LICB73	12/28/04	12/29/04	12/29/04	1625
SULFATE BY IC	001	W	04LICA73	12/28/04	12/29/04	12/29/04	
SULFATE BY IC	001 REP	W	04LICA73	12/28/04	12/29/04	12/29/04	
SULFATE BY IC	001 MS	W	04LICA73	12/28/04	12/29/04	12/29/04	

J02644

BROMIDE BY IC	002	W	04LICB73	12/28/04	12/29/04	12/30/04	
CHLORIDE BY IC	002	W	04LIC073	12/28/04	12/29/04	12/29/04	
FLUORIDE BY IC	002	W	04LICB73	12/28/04	12/29/04	12/30/04	
NITRITE BY IC	002	W	04LICB73	12/28/04	12/29/04	12/30/04	0005
NITRATE BY IC	002	W	04LICB73	12/28/04	12/29/04	12/29/04	1856
SULFATE BY IC	002	W	04LICA73	12/28/04	12/29/04	12/29/04	

LAB QC:

BROMIDE BY IC	MB1	W	04LICB73	N/A	12/29/04	12/29/04	
BROMIDE BY IC	MB1 BS	W	04LICB73	N/A	12/29/04	12/29/04	
CHLORIDE BY IC	MB1	W	04LIC073	N/A	12/29/04	12/29/04	
CHLORIDE BY IC	MB1 BS	W	04LIC073	N/A	12/29/04	12/29/04	
FLUORIDE BY IC	MB1	W	04LICB73	N/A	12/29/04	12/29/04	

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/29/04

LVL LOT # :0412L521

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
FLUORIDE BY IC	MB1 BS	W	04LICB73	N/A	12/29/04	12/29/04
NITRITE BY IC	MB1	W	04LICB73	N/A	12/29/04	12/29/04
NITRITE BY IC	MB1 BS	W	04LICB73	N/A	12/29/04	12/29/04
NITRATE BY IC	MB1	W	04LICB73	N/A	12/29/04	12/29/04
NITRATE BY IC	MB1 BS	W	04LICB73	N/A	12/29/04	12/29/04
SULFATE BY IC	MB1	W	04LICA73	N/A	12/29/04	12/29/04
SULFATE BY IC	MB1 BS	W	04LICA73	N/A	12/29/04	12/29/04



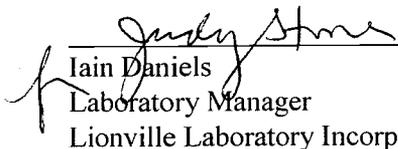
Analytical Report

Client: TNU-HANFORD B03-004 H2939
LVL#: 0412L521

W.O.#: 11343-606-001-9999-00
Date Received: 12-29-04

INORGANIC NARRATIVE

1. This narrative covers the analyses of 2 water samples.
2. The samples were prepared and analyzed in accordance with the method checked on the attached glossary.
3. Sample holding times as required by the method and/or contract were met with the exception of matrix spike analysis for Nitrite that was re-analyzed 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.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate and Sulfate were within the 75-125% control limits.
8. The replicate analyses for Chloride, Fluoride, Nitrite, Nitrate and Sulfate were within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Bromide was outside the control limit; replicate results for Bromide were less than 10 times the reporting limit.
9. 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

1/28/05
Date

njpl12-521

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 12 pages.

03

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
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	
Chlorine, 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 (b)
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)
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:		Method:	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L521

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	J02643	Bromide by IC	1.0	MG/L	0.25	1.0
		Chloride by IC	289	MG/L	25.0	100
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	449	MG/L	25.0	100
		Sulfate by IC	512	MG/L	25.0	100
-002	J02644	Bromide by IC	0.98	MG/L	0.25	1.0
		Chloride by IC	497	MG/L	50.0	200
		Fluoride by IC	0.28	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	536	MG/L	50.0	200
		Sulfate by IC	539	MG/L	50.0	200

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L521

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	04LICB73-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	05LIC001-MB1	Chloride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LIC073-MB1	Chloride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	04LICA73-MB1	Sulfate by IC	0.25 u	MG/L	0.25	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L521

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J02643	Bromide by IC	49.1	1.0	50.0	96.1	10.0
		Chloride by IC	1370	289	1000	107.9	200
		Fluoride by IC	48.1	0.24	50.0	95.8	10.0
		Nitrite by IC	51.8	0.25u	50.0	103.6	10.0
		Nitrate by IC	1500	449	1000	105.4	200
		Sulfate by IC	1610	512	1000	109.7	200
BLANK10	04LICB73-MB1	Bromide by IC	5.0	0.25u	5.0	99.6	1.0
		Fluoride by IC	4.8	0.25u	5.0	96.8	1.0
		Nitrite by IC	5.01	0.25u	5.00	100.1	1.0
		Nitrate by IC	5.00	0.25u	5.00	100.0	1.0
BLANK10	05LIC001-MB1	Chloride by IC	5.1	0.25u	5.0	102.2	1.0
BLANK10	04LIC073-MB1	Chloride by IC	4.8	0.25u	5.0	96.5	1.0
BLANK10	04LICA73-MB1	Sulfate by IC	4.9	0.25u	5.0	98.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L521

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

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE RPD		
-001REP	J02643	Bromide by IC	1.0	2.0	63.8	1.0
		Chloride by IC	289	267	8.0	100
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	449	448	0.13	100
		Sulfate by IC	512	512	0.012	100

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford

Date: 12-29-04

Purchase Order / Project# /
 AF# / SOW# / Release #: 803.004

Sample Custodian:

LvLI Batch #:

0412L521

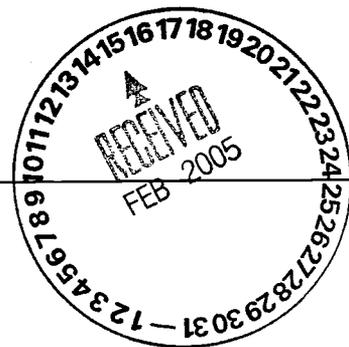
D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|--|----------|
| 1. Samples Hand Delivered or Shipped | Carrier FedEx | Airbill# 7903 8060 4932 | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp 4.3 °C | Cooler # AFS-04-028 | |
| 6. Custody seals on sample containers intact, signed and dated? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies | |



14 February 2005



Joan Kessner
Bechtel-Hanford, Inc.
3190 Washington Way
MSIN H9-03
Richland, WA 99352

**Subject: Contract No. 630
Analytical Data Package**

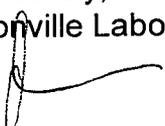
Dear Ms. Kessner:

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

LvLI Batch #	0412L523
SDG #	H2939
SAF #	B03-004
Date Received	12-30-04
# Samples	3
Matrix	WATER
Volatiles	X
Semivolatiles	X
Pest/PCB	X
PAH	X
DRO/KRO/GRO	X
GC Alcohols	X
Herbicides	X
Metals	X
Inorganics	X

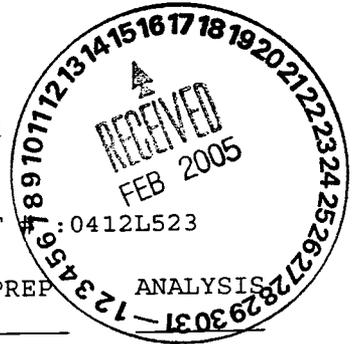
The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated


Orlette S. Johnson
Project Manager

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Lionville Laboratory, Inc.
 VOA ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939



DATE RECEIVED: 12/30/04

LVL LOT # : 0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LVG003	12/28/04	N/A	01/06/05
J02643	001 MS	W	05LVG003	12/28/04	N/A	01/06/05
J02643	001 MSD	W	05LVG003	12/28/04	N/A	01/06/05
J02644	002	W	05LVG003	12/28/04	N/A	01/06/05
J02645	003	W	05LVG003	12/28/04	N/A	01/06/05

LAB QC:

VBLKII	MB1	W	05LVG003	N/A	N/A	01/06/05
VBLKII	MB1 BS	W	05LVG003	N/A	N/A	01/06/05



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2939/B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-2004

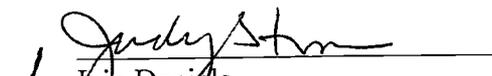
GC/MS VOLATILE

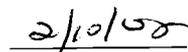
Three (3) water samples were collected on 12-28-2004.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for client specified volatile target compounds on 01-06-2005.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were analyzed within required holding time.
3. Non-target compounds were detected in samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. The samples were acidified to \leq pH2. Acidification of water samples usually eliminates the presence of the compound 2-Chloroethylvinylether.
10. A spectral search was conducted for 1,3-Butadiene, Allyl Alcohol, Crotonaldehyde, Dichloropropanol and Tetrahydrofuran; these compounds were not identified in the samples.
11. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
12. "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."


Jody Stein
Laboratory Manager
Lionville Laboratory Incorporated


Date

son\group\data\voal\tnu-hanford\0412-523.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 19 pages.

00000002

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.

LVL-21-21-035/A-08/93



888888885

Lionville Laboratory, Inc.

Volatiles by GC/MS, Appendix IX List

Report Date: 01/26/05 11:35

RFW Batch Number: 0412L523

Client: TNUHANFORD B03-004 H2939 Work Order: 11343606001 Page: 1a

Sample Information	Cust ID:	J02643	J02643	J02643	J02644	J02645	VBLKII
	RFW#:	001	001 MS	001 MSD	002	003	05LVG003-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate	1,2-Dichloroethane-d4	97 %	92 %	96 %	99 %	91 %	92 %
Recovery	Toluene-d8	106 %	102 %	100 %	106 %	102 %	105 %
	Bromofluorobenzene	109 %	104 %	105 %	108 %	104 %	103 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
	Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
	Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
	Vinyl Chloride	10 U	10 U	10 U	10 U	10 U	10 U
	Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
	Methylene Chloride	6 B	7 B	7 B	5 U	6 B	4 J
	Acetone	10 U	10 U	10 U	10 U	10 U	10 U
	Carbon Disulfide	5 U	5 U	5 U	5 U	5 U	5 U
	1,1-Dichloroethene	5 U	88 %	84 %	5 U	5 U	5 U
	1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
	trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
	cis-1,2-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
	Chloroform	5 U	5 U	5 U	5 U	5 U	5 U
	1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
	2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U
	1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
	Carbon Tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
	Vinyl Acetate	10 U	10 U	10 U	10 U	10 U	10 U
	Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U
	1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
	cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
	Trichloroethene	5 U	95 %	98 %	5 U	5 U	5 U
	Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U
	1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
	Benzene	5 U	102 %	103 %	5 U	5 U	5 U
	Trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
	Bromoform	5 U	5 U	5 U	5 U	5 U	5 U
	4-Methyl-2-pentanone	10 U	10 U	10 U	10 U	10 U	10 U
	2-Hexanone	10 U	10 U	10 U	10 U	10 U	10 U
	Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

APPENDIX IX

Cust ID: VBLKII BS

RFW#: 05LVG003-MB1

1,1,2,2-Tetrachloroethane	5	U
Toluene	106	%
Chlorobenzene	100	%
Ethylbenzene	5	U
Styrene	5	U
Xylene (total)	5	U
Acrolein	20	U
Acrylonitrile	5	U
Trichlorofluoromethane	5	U
Dichlorodifluoromethane	10	U
Acetonitrile	20	U
Iodomethane	5	U
Propionitrile (Ethyl Cyanide)	50	U
3-Chloropropene	10	U
Methacrylonitrile	10	U
Dibromomethane	10	U
Isobutyl alcohol	50	U
1,2-Dibromoethane	10	U
1,1,1,2-Tetrachloroethane	5	U
1,2,3-Trichloropropane	10	U
trans-1,4-Dichloro-2-butene	20	U
1,2-Dibromo-3-chloropropane	10	U
2-Chloro-1,3-Butadiene	5	U
1,1,2-Trichlorotrifluoroethane	10	U
Ethyl acetate	10	U
Diethylether	10	U
N-Butanol	50	U
1,2-Dichloroethene (total)	5	U
Isopropylbenzene	10	U
2-Chloroethylvinylether	20	U

*= Outside of EPA CLP QC limits.

53030303

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J02643

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0412L523-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q010611

Level: (low/med) LOW Date Received: 12/30/04

% Moisture: not dec. _____ Date Analyzed: 01/06/05

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	7.000	7	JB

1E
 VOLATILE ORGANICS ANALYSIS SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J02644

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0412L523-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q010614

Level: (low/med) LOW Date Received: 12/30/04

% Moisture: not dec. _____ Date Analyzed: 01/06/05

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

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.004	7	JB

1E
 VOLATILE ORGANICS ANALYSIS SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J02645

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0412L523-003

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: g010615

Level: (low/med) LOW Date Received: 12/30/04

% Moisture: not dec. _____ Date Analyzed: 01/06/05

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	7.007	5	JB

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKII

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____

SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER

Lab Sample ID: 05LVG003-MB1

Sample wt/vol: 5.00 (g/mL) ML

Lab File ID: q010605

Level: (low/med) LOW

Date Received: 01/06/05

% Moisture: not dec. _____

Date Analyzed: 01/06/05

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.883	20	J
2.	UNKNOWN	7.004	5	J

Bechtel Hanford Inc.				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B03-004-5		Page 2 of 2				
Collector GALE, S./SINGLTON K.				Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days					
Project Designation ERDF - Full List Leachate Analysis				Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality		45 Days					
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/</i> <i>AF304014/ERC 03102/ERC 99022</i>				Field Logbook No. <i>1/12/2004</i> <i>EL 454621518-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>					
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>				Offsite Property No. <i>A050-069/070</i>											
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation		Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
				Type of Container		aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
				No. of Container(s)		<i>LH 3</i>	<i>W 2</i>	<i>IL 2</i>	<i>PA 2</i>	<i>24 1</i>	<i>CC 1</i>	<i>DA 1</i>	<i>W 2</i>	<i>A-C 3</i>	<i>0 1</i>
				Volume		40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL
SAMPLE ANALYSIS				Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Methanol}	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item <input checked="" type="checkbox"/> in Special Instructions <i>APP 122104</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item <input checked="" type="checkbox"/> in Special Instructions. <i>APP 122104</i>	TOC - 9060		
Sample No.	Matrix *	Sample Date	Sample Time												
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X	X	
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X	X	
J02645	WATER	<i>12-23-04</i>	<i>0720</i>									X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<i>APP 122104</i> 2X ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Silicon, Thallium, Tin}; Mercury - 7470 - (CV) 3X VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) {1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran};				S=Soil SE=Scummen 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			
<i>SJGALE</i>		<i>122904 1330</i>		<i>REF 2A</i>		<i>1228 04 1330</i>									
<i>REF 2A</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>									
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>											
<i>FED EX</i>		<i>12-30-04 0910</i>		<i>V. [Signature]</i>		<i>12-30-04 0910</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

Collector: GALE, S/SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, III Price Code: 7N Data Turnaround: 45 Days
 Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality: | |

Ice Chest No. ERC 03104/ERC02405/DERR Field Logbook No. APD 122904 COA: RERDFZ 2560 Method of Shipment: Federal Express
AF004014/ERC03102/ERC99022 EL-1518-2
 Shipped To: EDGELINE SERVICES (Formerly TMA) / LVL1 Offsite Property No.: A050-069/070 Bill of Lading/Air Bill No.: SEE OSPC

PRESERVATION	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
	Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P
	No. of Container(s)	2	1	1	1	2	1	1	4
	Volume	1000ml. <i>4 MM</i>	60mL <i>4</i>	125ml.	1000ml. <i>5</i>	1000ml.	100ml.	250ml.	1000mL

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

SAMPLE ANALYSIS

Nitrosamines - 8070	See item 17 in Special Instructions.	Carbon-14	See item 17 in Special Instructions.	Gross Alpha Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
	<i>APD 122904</i>		<i>APD 122904</i>					

Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	12 25 04	1015	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	104530	X	X	X	X	X	X	X	X
J02645	WATER		<i>APD 122809</i>								

CHAIN OF POSSESSION			Sign/Print Names			SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			444 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate) 521 Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)		S=Soil SE= Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS= Drum Sub DL= Drum Lids T= Tissue WL= Wipe L= Liquid VS= Vegetation N= Other
<i>S. GALE</i>	<i>122904 1330</i>	<i>REF 2A</i>	<i>122804 1330</i>					
<i>REF 2A</i>	<i>122904 1000</i>	<i>S. GALE</i>	<i>122904 1000</i>					
<i>S. GALE</i>	<i>122904 1000</i>	<i>FED EX</i>						
<i>J. J. J.</i>	<i>122904 0910</i>	<i>J. J. J.</i>	<i>123004 0910</i>					

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

Collector: GALE, S./SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, JII Price Code: 7N Data Turnaround: 45 Days
 Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality:

Ice Chest No.: ERC 03/04/ERC02405/DERR Field Logbook No.: 04/12/04 COA: PERDFZ 2560 Method of Shipment: Federal Express
AFB 04/04/ERC03/02/ERC99/022 EL: 1518-2

Shipped To: EBERLINE SERVICES (Formerly TMA) (LVL1) Offsite Property No.: A050-069/070 Bill of Lading/Air Bill No.: SEE DSPC

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	NaOH to pH >= 12 Cool 4C						
	HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
		No. of Container(s)	6 ¹	1 ¹	1 ¹	1 ¹	1 ¹	2 ²	4 ⁴	4 ⁴	DE ²	1 ¹
		Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS	Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010

Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	12 28 04	1015	X	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	1030	X	X	X	X	X	X	X	X	X
J02645	WATER											

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS	Matrix *		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			(1) Semi-VOA - 8270A (App IX); Semi-VOA -- 8270A (App IX Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]	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 N=Other
SJGALE	122804 1330	REF ZA	122804 1330				
REF ZA	122904 1000	SJGALE	122904 1000				
SJGALE	122904 1000	FED EX					
FED EX	12-30-04 0910	V. A. ...	12-30-04 0910				

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

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TPH - Hanford*

Date: *12-30-04*

Purchase Order / Project# /
 F# / SOW# / Release #: *303-004*

LvLI Batch #: *0412L523*

Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0201

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|--|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>ERC-03-104</i>
<i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:04</i>
<i>DERR</i> |
| 5. Samples received cooled or ambient? | Temp <i>3.5</i>
<i>13/10</i>
<i>12/8</i>
<i>5-3</i> | °C <i>5-2</i>
<i>5-8</i> | Cooler # | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 Y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> NIA | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> NIA | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |



Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0004	12/28/04	01/03/05	01/12/05
J02643	001 MS	W	05LE0004	12/28/04	01/03/05	01/12/05
J02643	001 MSD	W	05LE0004	12/28/04	01/03/05	01/12/05
J02644	002	W	05LE0004	12/28/04	01/03/05	01/12/05

LAB QC:

SBLKDE	MB1	W	05LE0004	N/A	01/03/05	01/12/05
SBLKDE	MB1 BS	W	05LE0004	N/A	01/03/05	01/12/05
SBLKDE	MB1 BSD	W	05LE0004	N/A	01/03/05	01/12/05



Case Narrative

Client: TNU HANFORD B03-004

LVL#: 0412L523

SDG/SAF#: H2939/B03-004

W.O.#: 11343-606-001-9999-00

Date Received: 12-30-2004

SEMIVOLATILE

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 01-03-2005 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 01-12-2005.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. One (1) of forty-two (42) surrogate recoveries was outside acceptance criteria. However, the surrogate recovery criteria were met (i.e., no more than one outlier per fraction {acid and base neutral} and no recoveries less than 10%).
5. One (1) of twenty-two (22) matrix spike recoveries was outside acceptance criteria. The matrix spike samples were extracted using 15g sample volume due to limited sample volume.
6. One (1) of twenty-two (22) blank spike recoveries was outside acceptance criteria.
7. The method blank contained the common laboratory contaminants Bis (2-Ethylhexyl) phthalate and Di-n-butylphthalate at levels less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. A spectral search was conducted for the compounds 1-Acetyl-2-thiourea, 2,5-Diaminotoluene and 2-Cyclo-4, 6-Dinitrophenol; however, the compounds were not identified in the samples.
10. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
11. 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

1/27/05
Date

som\group\data\bna\tnu-hanford\0412-523.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 2 2 pages.

00000002

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.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Appendix IX List

Report Date: 01/14/05 09:16

RFW Batch Number: 0412L523

Client: TNUHANFORD B03-004 H2939

Work Order: 11343606001

Page: 1a

Sample Information	Cust ID:	J02643	J02643	J02643	J02644	SBLKDE	SBLKDE BS
RFW#:	001	001 MS	001 MSD	002	05LE0004-MB1	05LE0004-MB1	
Matrix:	WATER	WATER	WATER	WATER	WATER	WATER	
D.F.:	1.00	1.00	1.00	1.00	1.00	1.00	
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Nitrobenzene-d5	54 %	67 %	60 %	64 %	58 %	81 %	
Surrogate 2-Fluorobiphenyl	49 %	60 %	52 %	54 %	57 %	67 %	
Recovery p-Terphenyl-d14	75 %	87 %	78 %	82 %	66 %	93 %	
Phenol-d5	37 %	70 %	61 %	67 %	30 %	49 %	
2-Fluorophenol	20 * %	80 %	71 %	76 %	51 %	95 %	
2,4,6-Tribromophenol	14 %	74 %	60 %	67 %	56 %	83 %	
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Phenol	10 U	74 %	65 %	10 U	10 U	86 %	
bis(2-Chloroethyl) ether	10 U	20 U	20 U	10 U	10 U	10 U	
2-Chlorophenol	10 U	71 %	64 %	10 U	10 U	83 %	
1,3-Dichlorobenzene	10 U	20 U	20 U	10 U	10 U	10 U	
1,4-Dichlorobenzene	10 U	56 %	49 %	10 U	10 U	61 %	
Benzyl alcohol	10 U	20 U	20 U	10 U	10 U	10 U	
1,2-Dichlorobenzene	10 U	20 U	20 U	10 U	10 U	10 U	
2-Methylphenol	10 U	20 U	20 U	10 U	10 U	10 U	
bis(2-Chloroisopropyl) ether	10 U	20 U	20 U	10 U	10 U	10 U	
3/4-Methylphenol	10 U	20 U	20 U	10 U	10 U	10 U	
N-Nitroso-Di-n-propylamine	10 U	64 %	59 %	10 U	10 U	10 U	
Hexachloroethane	10 U	20 U	20 U	10 U	10 U	76 %	
Nitrobenzene	10 U	20 U	20 U	10 U	10 U	10 U	
Isophorone	10 U	20 U	20 U	10 U	10 U	10 U	
2-Nitrophenol	10 U	20 U	20 U	10 U	10 U	10 U	
2,4-Dimethylphenol	10 U	20 U	20 U	10 U	10 U	10 U	
Benzoic acid	25 U	50 U	50 U	25 U	25 U	25 U	
bis(2-Chloroethoxy) methane	10 U	20 U	20 U	10 U	10 U	10 U	
2,4-Dichlorophenol	10 U	20 U	20 U	10 U	10 U	10 U	
1,2,4-Trichlorobenzene	10 U	57 %	48 %	10 U	10 U	10 U	
Naphthalene	10 U	20 U	20 U	10 U	10 U	62 %	
4-Chloroaniline	10 U	20 U	20 U	10 U	10 U	10 U	
Hexachlorobutadiene	10 U	20 U	20 U	10 U	10 U	10 U	
4-Chloro-3-methylphenol	10 U	78 %	69 %	10 U	10 U	10 U	
2-Methylnaphthalene	10 U	20 U	20 U	10 U	10 U	84 %	
Hexachlorocyclopentadiene	10 U	20 U	20 U	10 U	10 U	10 U	

*= Outside of EPA CLP QC limits.

Cust ID: J02643 J02643 J02643 J02644 SBLKDE SBLKDE BS

RFW#:	001	001 MS	001 MSD	002	05LE0004-MB1	05LE0004-MB1
Pyridine	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosodimethylamine	10 U	20 U	20 U	10 U	10 U	10 U
Ethyl methacrylate	10 U	20 U	20 U	10 U	10 U	10 U
2-Picoline	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosomethylethylamine	10 U	20 U	20 U	10 U	10 U	10 U
Methyl methanesulfonate	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosodiethylamine	10 U	20 U	20 U	10 U	10 U	10 U
Ethyl methanesulfonate	10 U	20 U	20 U	10 U	10 U	10 U
Aniline	10 U	20 U	20 U	10 U	10 U	10 U
Pentachloroethane	10 U	20 U	20 U	10 U	10 U	10 U
3-Methylphenol	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosopyrrolidine	10 U	20 U	20 U	10 U	10 U	10 U
Acetophenone	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosomorpholine	10 U	20 U	20 U	10 U	10 U	10 U
o-Toluidine	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitrosopiperidine	50 U	100 U	100 U	50 U	50 U	50 U
a,a-Dimethylphenethylamine	10 U	20 U	20 U	10 U	10 U	10 U
2,6-Dichlorophenol	10 U	20 U	20 U	10 U	10 U	10 U
Hexachloropropene	10 U	20 U	20 U	10 U	10 U	10 U
p-Phenylenediamine	10 U	20 U	20 U	10 U	10 U	10 U
N-Nitroso-di-n-butylamine	10 U	20 U	20 U	10 U	10 U	10 U
Safrole	10 U	20 U	20 U	10 U	10 U	10 U
1,2,4,5-Tetrachlorobenzene	10 U	20 U	20 U	10 U	10 U	10 U
Isosafrole	10 U	20 U	20 U	10 U	10 U	10 U
1,4-Naphthoquinone	10 U	20 U	20 U	10 U	10 U	10 U
1,3-Dinitrobenzene	10 U	20 U	20 U	10 U	10 U	10 U
Pentachlorobenzene	10 U	20 U	20 U	10 U	10 U	10 U
1-Naphthylamine	10 U	20 U	20 U	10 U	10 U	10 U
2-Naphthylamine	10 U	20 U	20 U	10 U	10 U	10 U
2,3,4,6-Tetrachlorophenol	10 U	2 J	1 J	10 U	10 U	10 U
1,3,5-Trinitrobenzene	10 U	20 U	20 U	10 U	10 U	0.7 J
Diallate	10 U	20 U	20 U	10 U	10 U	10 U
Phenacetin	10 U	20 U	20 U	10 U	10 U	10 U
Diphenylamine	10 U	20 U	20 U	10 U	10 U	10 U
5-Nitro-o-toluidine	10 U	20 U	20 U	10 U	10 U	10 U
4-Aminobiphenyl	10 U	20 U	20 U	10 U	10 U	10 U
Pronamide	10 U	20 U	20 U	10 U	10 U	10 U
2-sec-Butyl-4,6-dinitrophenol	50 U	100 U	100 U	50 U	50 U	50 U
Pentachloronitrobenzene	50 U	100 U	100 U	50 U	50 U	50 U
4-Nitroquinoline-1-oxide	20 U	40 U	40 U	20 U	20 U	20 U

*= Outside of EPA CLP QC limits.

0000000000

	Cust ID:	J02643	J02643	J02643	J02644	SBLKDE	SBLKDE BS
	RFW#:	001	001 MS	001 MSD	002	05LE0004-MB1	05LE0004-MB1
Methapyrilene		10 U	20 U	20 U	10 U	10 U	10 U
Aramite		20 U	40 U	40 U	20 U	20 U	20 U
Chlorobenzilate		10 U	20 U	20 U	10 U	10 U	10 U
p-Dimethylaminoazobenzene		10 U	20 U	20 U	10 U	10 U	10 U
3,3'-Dimethylbenzidine		10 U	20 U	20 U	10 U	10 U	10 U
2-Acetylaminofluorene		10 U	20 U	20 U	10 U	10 U	10 U
7,12-Dimethylbenz(a)anthracene		10 U	20 U	20 U	10 U	10 U	10 U
Hexachlorophene		100 U	200 U	200 U	100 U	100 U	100 U
3-Methylcholanthrene		10 U	20 U	20 U	10 U	10 U	10 U
1,2-Diphenylhydrazine		10 U	20 U	20 U	10 U	10 U	10 U
1,4-Dinitrobenzene		10 U	20 U	20 U	10 U	10 U	10 U
O,O,O-Triethyl phosphorothioat		10 U	20 U	20 U	10 U	10 U	10 U

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

8888888888

Cust ID: SBLKDE BSD

RFW#: 05LE0004-MB1

2,4,6-Trichlorophenol	10	U
2,4,5-Trichlorophenol	25	U
2-Chloronaphthalene	10	U
2-Nitroaniline	25	U
Dimethylphthalate	10	U
Acenaphthylene	10	U
2,6-Dinitrotoluene	10	U
3-Nitroaniline	25	U
Acenaphthene	55	%
2,4-Dinitrophenol	25	U
4-Nitrophenol	79	%
Dibenzofuran	10	U
2,4-Dinitrotoluene	67	%
4-Chlorophenyl-phenylether	10	U
Fluorene	10	U
4-Nitroaniline	25	U
4,6-Dinitro-2-methylphenol	25	U
N-Nitrosodiphenylamine (1)	10	U
4-Bromophenyl-phenylether	10	U
Hexachlorobenzene	10	U
Pentachlorophenol	62	%
Phenanthrene	10	U
Anthracene	10	U
Di-n-Butylphthalate	0.7	JB
Fluoranthene	10	U
Pyrene	75	%
Butylbenzylphthalate	10	U
3,3'-Dichlorobenzidine	10	U
Benzo(a)anthracene	10	U
Chrysene	10	U
bis(2-Ethylhexyl)phthalate	1	JB
Di-n-Octyl phthalate	10	U
Benzo(b)fluoranthene	10	U
Benzo(k)fluoranthene	10	U
Benzo(a)pyrene	10	U
Indeno(1,2,3-cd)pyrene	10	U
Dibenzo(a,h)anthracene	10	U
Benzo(g,h,i)perylene	10	U
1,4-Dioxane	5	U
Methyl methacrylate	10	U

* = Outside of EPA CLP QC limits.

119999999

Cust ID: SBLKDE BSD

RFW#: 05LE0004-MB1

Pyridine	10	U
N-Nitrosodimethylamine	10	U
Ethyl methacrylate	10	U
2-Picoline	10	U
N-Nitrosomethylethylamine	10	U
Methyl methanesulfonate	10	U
N-Nitrosodiethylamine	10	U
Ethyl methanesulfonate	10	U
Aniline	10	U
Pentachloroethane	10	U
3-Methylphenol	10	U
N-Nitrosopyrrolidine	10	U
Acetophenone	10	U
N-Nitrosomorpholine	10	U
o-Toluidine	10	U
N-Nitrosopiperidine	50	U
a,a-Dimethylphenethylamine	10	U
2,6-Dichlorophenol	10	U
Hexachloropropene	10	U
p-Phenylenediamine	10	U
N-Nitroso-di-n-butylamine	10	U
Safrole	10	U
1,2,4,5-Tetrachlorobenzene	10	U
Isosafrole	10	U
1,4-Naphthoquinone	10	U
1,3-Dinitrobenzene	10	U
Pentachlorobenzene	10	U
1-Naphthylamine	10	U
2-Naphthylamine	10	U
2,3,4,6-Tetrachlorophenol	10	U
1,3,5-Trinitrobenzene	10	U
Diallate	10	U
Phenacetin	10	U
Diphenylamine	10	U
5-Nitro-o-toluidine	10	U
4-Aminobiphenyl	10	U
Pronamide	10	U
2-sec-Butyl-4,6-dinitrophenol	50	U
Pentachloronitrobenzene	50	U
4-Nitroquinoline-1-oxide	20	U

*= Outside of EPA CLP QC limits.

21989999

Cust ID: SBLKDE BSD

RfW#: 05LE0004-MB1

Methapyrilene	10	U
Aramite	20	U
Chlorobenzilate	10	U
p-Dimethylaminoazobenzene	10	U
3,3'-Dimethylbenzidine	10	U
2-Acetylaminofluorene	10	U
7,12-Dimethylbenz(a)anthracene	10	U
Hexachlorophene	100	U
3-Methylcholanthrene	10	U
1,2-Diphenylhydrazine	10	U
1,4-Dinitrobenzene	10	U
O,O,O-Triethyl phosphorothioat	10	U

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

1F
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J02643

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

Client: TNUHANFORD B03-004 H2939

Matrix: (soil/water) WATER

Lab Sample ID: 0412L523-001

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

Lab File ID: C011208

Level: (low/med) LOW

Date Received: 12/30/04

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

Date Extracted: 01/03/05

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/12/05

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

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

Number TICs found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.881	2	J
2.	UNKNOWN	16.519	4	J
3.	UNKNOWN	20.356	10	J
4.	UNKNOWN	25.123	8	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J02644

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

Client: TNUHANFORD B03-004 H2939

Matrix: (soil/water) WATER

Lab Sample ID: 0412L523-002

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

Lab File ID: C011211

Level: (low/med) LOW

Date Received: 12/30/04

% Moisture: decanted: (Y/N)

Date Extracted: 01/03/05

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/12/05

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

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

Number TICs found: 2

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	16.510	4	J
2.	UNKNOWN	20.355	10	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKDE

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

Client: TNUHANFORD B03-004 H2939

Matrix: (soil/water) WATER

Lab Sample ID: 05LE0004-MB1

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

Lab File ID: C011205

Level: (low/med) LOW

Date Received: 01/03/05

% Moisture: decanted: (Y/N)

Date Extracted: 01/03/05

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/12/05

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

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

Number TICs found: 5

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	17.250	2	J
2.	UNKNOWN	18.920	2	J
3.	UNKNOWN	21.573	3	J
4.	UNKNOWN	22.461	2	J
5.	UNKNOWN	23.148	2	J

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 2 of 3				
Collector* GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround				
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality		45 Days						
Ice Chest No. <i>ERC 03104/ERC 02405/DERR</i> <i>AF304014/ERC 03102/ERC 99022</i>		Field Logbook No. <i>SA122904</i> <i>EL-41621518-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>						
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(L.V.L.I.)</i>		Offsite Property No. <i>A050-069/070</i>												
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.		Preservation		Cool 4C	HCl to pH > 2 Cool 4C	HCl to pH < 2 Cool 4C	HCl to pH < 2 Cool 4C	HNO3 to pH < 2	Cool 4C	H2SO4 to pH < 2 Cool 4C	Cool 4C	HCl or H2SO4 to pH < 2 Cool	HCl or H2SO4 to pH < 2 Cool	
		Type of Container		aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*	
		No. of Container(s)		<i>EX 3</i>	<i>WT 2</i>	<i>YZ 2</i>	<i>AB 2</i>	<i>CD 1</i>	<i>CC 1</i>	<i>0 1</i>	<i>WT 2</i>	<i>A-C 3</i>	<i>0 1</i>	
		Volume		40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL	
SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol);		oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 11 in Special Instructions. <i>ADD 12/21/04</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 11 in Special Instructions. <i>ADD 12/21/04</i>	TOC - 9060		
Sample No.	Matrix *	Sample Date	Sample Time											
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X	
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X	
J02645	WATER	<i>12-28-04</i>	<i>0720</i>								X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		21 <i>ADD 12/21/04</i> ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) ; Arsenic, Lead, Selenium, Silicon, Thallium, Tin; Mercury - 7470 - (CV) 31 <i>ADD 12/21/04</i> VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) [1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran];				S=Soil SE=Soilment 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		
<i>SJGALE</i>		<i>122904 1330</i>		<i>REF 2A</i>		<i>1228 04 1330</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
<i>REF 2A</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>										
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
<i>FED EX</i>		<i>12-30-04 0910</i>		<i>V. J.</i>		<i>12-30-04 0910</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title		Date/Time								
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time								

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 2
Collector GALE, S./SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality []		45 Days	

Ice Chest No. <i>ERC 03104/ERC 02405/DERR AF004014/ERC03102/ERC99022</i>	Field Logbook No. <i>AD 122904 EL-118-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express
Shipped To <i>AD 122904 BERKLINE SERVICES (Formerly TMA) / LVL1</i>	Offsite Property No. <i>A050-069/070</i>	Bill of Lading/Air Bill No. <i>SEE O5PC</i>	

PRESERVATION	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
	Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P
	No. of Container(s)	2	1	1	1	2	1	1	4
	Volume	1000ml. <i>4 MM</i>	60mL <i>4</i>	125ml.	1000ml. <i>5</i>	1000ml.	100mL	250ml.	1000mL

SAMPLE ANALYSIS		Nitrosamines - 8070	See item 17 in Special Instructions. <i>AD 122904</i>	Carbon-14	See item 18 in Special Instructions. <i>AD 122904</i>	Gross Alpha; Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
-----------------	--	---------------------	--	-----------	--	-------------------------	---------------	---------------	------------	--------------

Sample No.	Matrix *	Sample Date	Sample Time							
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>104530</i>	X	X	X	X	X	X	X
J02645	WATER		<i>AD 122809</i>							

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS <i>AD 122904</i> 4x IC Anions - 300.0 [Iodide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate] 5x Gamma Spec - Add-on [Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]	Matrix * S=Soil SE= Sediment SO= Solid SL= Sludge W= Water O= Oil A= Air DS= From Solids DL= From Liquids T= Tissue WI= Wipe L= Liquid V= Vegetation N= Other
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1330</i>	Received By/Stored In <i>REFZA</i>	Date/Time <i>122904 1330</i>		
Relinquished By/Removed From <i>REFZA</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>S. GALE</i>	Date/Time <i>122904 1000</i>		
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time		
Relinquished By/Removed From <i>F. R. O'Connell</i>	Date/Time <i>123004 0910</i>	Received By/Stored In <i>J. R. O'Connell</i>	Date/Time <i>123004 0910</i>		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-004-5	Page 1 of 2
Collector GALE, S./SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality <input type="checkbox"/>				
Ice Chest No. <i>ERC03104/ERC02405/DERR</i> <i>AFB04014/ERC03102/ERC99022</i>	Field Logbook No. <i>01/22/04</i> <i>EL-1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express				
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>	Offsite Property No. <i>A050-069/070</i>	Bill of Lading/Air Bill No. <i>SEE DSPC</i>					

POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	None	ZnAc+NaOH to pH > 9 Cool	Cool 4C	NaOH to pH >= 12 Cool 4C					
	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
	No. of Container(s)	<i>6¹</i>	<i>1¹</i>	<i>1¹</i>	<i>1¹</i>	<i>1¹</i>	<i>2²</i>	<i>4⁴</i>	<i>4⁴</i>	<i>2²</i>	<i>1¹</i>
	Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS				Cartonys - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12 28 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X
J02645	WATER												

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	(1) Semi-VOA - 8270A (App 1X); Semi-VOA -- 8270A (App 1X Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]	
<i>SJGALE</i>	<i>122804 1330</i>	<i>REFZA</i>	<i>122804 1330</i>		
<i>REFZA</i>	<i>122904 1000</i>	<i>SJGALE</i>	<i>122904 1000</i>		
<i>SJGALE</i>	<i>122904 1000</i>	<i>FED EX</i>			
<i>Fed Ex</i>	<i>12-30-04 0910</i>	<i>V. H...</i>	<i>12-30-04 0910</i>		

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

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TMU - Hanford*
 Purchase Order / Project# /
 F# / SOW# / Release #: *603-004*
 vLI Batch #: *0412L523*

Date: *12-30-04*

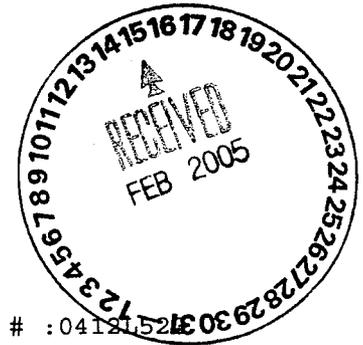
Sample Custodian: *[Signature]*
7914 3232 4966 FORM 0201

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|--|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3.5</i>
<i>13.10</i>
<i>12.8</i>
<i>5.3</i> | °C <i>5.2</i>
<i>5.8</i> | Cooler # | <i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:014</i>
<i>DEPR</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 Y TPH not Preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH.</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>TOC</i> | <i>NIA Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>NIA</i> |
| 15. Shipment meets LvLi Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <input type="checkbox"/> No Discrepancies |

Lionville Laboratory, Inc.
 PEST/PCB ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B03-004 *H2939*



DATE RECEIVED: 12/30/04

LVL LOT # :04121521

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0002	12/28/04	01/03/05	01/05/05
J02643	001 MS	W	05LE0002	12/28/04	01/03/05	01/05/05
J02643	001 MSD	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002	W	05LE0002	12/28/04	01/03/05	01/05/05

LAB QC:

PBLKDY	MB1	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BS	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BSD	W	05LE0002	N/A	01/03/05	01/05/05

9/2/11/05



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H 2939/B03-004

W.O.#: 11343-606-001-9999-00

Date Received: 12-30-2004

CHLORINATED PESTICIDES

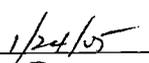
Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-03-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-05-2005. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. One (1) of forty (40) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

som\vr\group\data\pest\tnu hanford\0412-523.pes

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 1 2 pages.



GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 01/06/05 09:18

RFW Batch Number: 0412L523

Client: TNU-HANFORD B03-004

Work Order: 11343606001 Page: 1

	Cust ID:	J02643	J02643	J02643	J02644	PBLKDY	PBLKDY BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	05LE0002-MB1	05LE0002-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate: Tetrachloro-m-xylene		69 %	52 %	67 %	58 %	70 %	61 %
Decachlorobiphenyl		62 %	49 %	64 %	58 %	85 %	71 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Alpha-BHC		0.050 U	78 %	104 %	0.050 U	0.050 U	96 %
Beta-BHC		0.050 U	73 %	93 %	0.050 U	0.050 U	86 %
Delta-BHC		0.050 U	81 %	108 %	0.050 U	0.050 U	100 %
gamma-BHC (Lindane)		0.050 U	77 %	101 %	0.050 U	0.050 U	92 %
Heptachlor		0.050 U	73 %	93 %	0.050 U	0.050 U	84 %
Aldrin		0.050 U	61 %	78 %	0.050 U	0.050 U	71 %
Heptachlor epoxide		0.050 U	119 %	153 * %	0.050 U	0.050 U	92 %
Endosulfan I		0.050 U	75 %	96 %	0.050 U	0.050 U	87 %
Dieldrin		0.10 U	76 %	101 %	0.10 U	0.10 U	92 %
4,4'-DDE		0.10 U	78 %	104 %	0.10 U	0.10 U	93 %
Endrin		0.10 U	84 %	110 %	0.10 U	0.10 U	100 %
Endosulfan II		0.10 U	70 %	92 %	0.10 U	0.10 U	91 %
4,4'-DDD		0.10 U	74 %	99 %	0.10 U	0.10 U	89 %
Endosulfan sulfate		0.10 U	81 %	105 %	0.10 U	0.10 U	96 %
4,4'-DDT		0.10 U	84 %	110 %	0.10 U	0.10 U	100 %
Methoxychlor		0.50 U	78 %	101 %	0.50 U	0.50 U	91 %
Endrin ketone		0.10 U	81 %	104 %	0.10 U	0.10 U	97 %
Endrin aldehyde		0.10 U	77 %	99 %	0.10 U	0.10 U	90 %
alpha-Chlordane		0.050 U	74 %	94 %	0.050 U	0.050 U	85 %
gamma-Chlordane		0.050 U	82 %	107 %	0.050 U	0.050 U	91 %
Toxaphene		5.0 U	5.0 U	5.1 U	5.0 U	5.0 U	5.0 U

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

Handwritten signature

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 3	
Collector GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565	Project Coordinator KESSNER, JH	Price Code 7N	Date Turnaround
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004	Air Quality		45 Days
Ice Chest No. <i>ERC 03104/ERL02405/DEAR/AF504014/ERC03102/ERL99022</i>		Field Logbook No. <i>4A122504</i> <i>EL-516215B-2</i>		COA <i>RERDF2 2560</i>	Method of Shipment Federal Express		
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>		Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
	Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
	No. of Container(s)	<i>LH 3</i>	<i>WT 2</i>	<i>YZ 2</i>	<i>AB 2</i>	<i>2</i>	<i>CE 1</i>	<i>A 1</i>	<i>WT 2</i>	<i>A-C 3</i>	<i>0 1</i>
	Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL

SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Methanol}	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 2 in Special Instructions <i>2/12/04</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 3 in Special Instructions <i>2/12/04</i>	TOC - 9060
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Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X
J02645	WATER	<i>12-28-04</i>	<i>0720</i>							X		

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS <i>2/12/04</i> ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Silicon, Thallium, Tin}; Mercury - 7470 - (CV) <i>3/21</i> VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) {1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran};	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
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>1228 04 1330</i>		
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>SJGALE</i>	Date/Time <i>122904 1000</i>		
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time		
Relinquished By/Removed From <i>FED EX</i>	Date/Time <i>12-30-04 0910</i>	Received By/Stored In <i>[Signature]</i>	Date/Time <i>12-30-04 0910</i>		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		

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

Collector: GALE, S./SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, JH Price Code: 7N Data Turnaround: 45 Days

Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality: []

Ice Chest No.: ERC 03104/ERC 02405/DERR / AFB04014/ERC03102/ERC99022 Field Logbook No.: AD 122904 COA: RERDFZ 2560 Method of Shipment: Federal Express

Shipped To: EDGELINE SERVICES (Formerly TMA) / LVL1 Offsite Property No.: A050-069/070 Bill of Lading/Air Bill No.: SEE O5PC

PRESERVATION	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
	Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P
	No. of Container(s)	2	1	1	1	2	1	4	1
	Volume	1000ml.	60mL	125ml.	1000ml.	1000ml.	100mL	250mL	1000mL

SAMPLE ANALYSIS		Nitrosamines - 8070	See item 11 in Special Instructions.	Carbon-14	See item 12 in Special Instructions.	Gross Alpha; Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
			AD 122904		AD 122904					

Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	12 25 04	1015	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	104530	X	X	X	X	X	X	X	X
J02645	WATER		AD 122809								

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS AD 122904 IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate) 521 Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)	Matrix * S=Sol SE=Solvent SO=Solid SL=Sludge W=Water U=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Tissue WI=Wipe L=Liquid VA=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		
S. GALE	122904 1330	REF 2A	122804 1330		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		
REF 2A	122904 1000	S. GALE	122904 1000		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		
S. GALE	122904 1000	FED EX			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		
F. J. DEER	123004 0910	J. P. [Signature]	123004 0910		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		

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

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 1 of 2			
Collector GALE, S./SINGLTON K.			Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days			
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality <input type="checkbox"/>							
Ice Chest No. <i>ERC 03/04/ERC02405/DERR</i> <i>AFB 04/04/ERC03/02/ERC99022</i>			Field Logbook No. <i>01512904</i> <i>EL-15162 1518-2</i>		COA <i>PERDFZ 2560</i>		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>			Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>									
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH = 12 Cool 4C	
				Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
				No. of Container(s)	<i>GV 1</i>	<i>HH 1</i>	<i>HY 1</i>	<i>LS 1</i>	<i>K* 1</i>	<i>IK 2</i>	<i>PS 4</i>	<i>RS 4</i>	<i>DE 2</i>	<i>N 1</i>
				Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9050	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010	
Sample No.	Matrix *	Sample Date	Sample Time											
J02643	WATER	12 28 04	1015	X	X	X	X	X	X	X	X	X	X	
J02644	WATER	12 28 04	1030	X	X	X	X	X	X	X	X	X	X	
J02645	WATER													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>122804 1330</i>		Received By/Stored In <i>REF 2A</i>		Date/Time <i>122804 1330</i>		(1) Semi-VOA - 8270A (App IX); Semi-VOA -- 8270A (App IX Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]				S=Soil SE=Sediment SO=Solid St=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <i>REF 2A</i>		Date/Time <i>122904 1000</i>		Received By/Stored In <i>SJGALE</i>		Date/Time <i>122904 1000</i>								
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>122904 1000</i>		Received By/Stored In <i>FED EX</i>		Date/Time								
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>12-30-04 0910</i>		Received By/Stored In <i>V. Hansen</i>		Date/Time <i>12-30-04 0910</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION	Received By			Title			Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time							

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TPH - Homford*

Date: *12-30-04*

Purchase Order / Project# /
 AF# / SOW# / Release #: *B03-004*

Sample Custodian: *[Signature]*

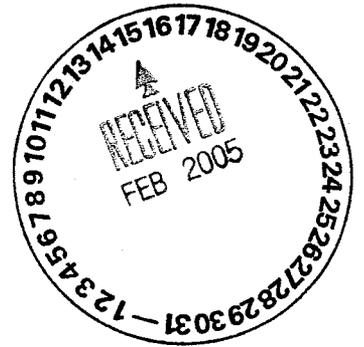
LI Batch #: *0412L523*

7914 3232 4966 FORM 0281

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|---|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3.5</i>
<i>13.10</i>
<i>12.18</i>
<i>5.3</i> | °C <i>5.2</i>
<i>5.8</i> | Cooler # | <i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:014</i>
<i>DEER</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 Y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH.</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No | Discrepancies |



Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002 MS	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002 MSD	W	05LE0002	12/28/04	01/03/05	01/05/05

LAB QC:

PBLKDY	MB1	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BS	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BSD	W	05LE0002	N/A	01/03/05	01/05/05

Handwritten signature/initials



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2439 /B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-2004

PCB

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-03-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-05-2005. 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 and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. 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

1/24/05
Date

som\vr:\group\data\pest\tnu hanford\0412-523.pcb
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.



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: 01/06/05 10:41

RFW Batch Number: 0412L523

Client: TNU-HANFORD B03-004

Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J02643	J02644	J02644	J02644	PBLKDY	PBLKDY BS
	RFW#:	001	002	002 MS	002 MSD	05LE0002-MB1	05LE0002-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	56 %	42 %	47 %	56 %	55 %	47 %
	Decachlorobiphenyl	50 %	43 %	45 %	51 %	65 %	54 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Aroclor-1016		0.40 U	0.40 U	67 %	72 %	0.40 U	68 %
Aroclor-1221		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		0.40 U	0.40 U	65 %	71 %	0.40 U	64 %

Cust ID: PBLKDY BSD

Sample Information	RFW#:	05LE0002-MB1
	Matrix:	WATER
	D.F.:	1.00
	Units:	UG/L

Surrogate:	Tetrachloro-m-xylene	59 %
	Decachlorobiphenyl	56 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====		
Aroclor-1016		77 %
Aroclor-1221		0.40 U
Aroclor-1232		0.40 U
Aroclor-1242		0.40 U
Aroclor-1248		0.40 U
Aroclor-1254		0.40 U
Aroclor-1260		72 %

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

Handwritten signature/initials
1/12/05

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 3
Collector GALE, S/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality		45 Days	
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/ AF504014/ERC 03102/ERC 99022</i>	Field Logbook No. <i>1A122904 EL454621518-2</i>	COA <i>RERDF2 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>	
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>	Offsite Property No. <i>A050-069/070</i>					

POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
	Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
	No. of Container(s)	<i>3</i>	<i>2</i>	<i>2</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>
	Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL

SAMPLE ANALYSIS				Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 2 in Special Instructions <i>1A122904</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 3 in Special Instructions <i>1A122904</i>	TOC - 9060
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X
J02645	WATER	<i>12-23-04</i>	<i>0720</i>									X	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	2/1 ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Silicon, Thallium, Tin}; Mercury - 7470 - (CV) 3/2 VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) {1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran};		S=Soil SE=Scummen SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
<i>SJGALE</i>	<i>12-28-04 1330</i>	<i>REF 2A</i>	<i>12-28-04 1330</i>			
<i>REF 2A</i>	<i>12-29-04 1000</i>	<i>SJGALE</i>	<i>12-29-04 1000</i>			
<i>SJGALE</i>	<i>12-29-04 1000</i>	<i>FED EX</i>				
<i>FED EX</i>	<i>12-30-04 0910</i>	<i>[Signature]</i>	<i>12-30-04 0910</i>			

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 1 of 1	
Collector GALE, SJ/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JJ		Price Code 7N	Data Turnaround	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality		45 Days		
Ice Chest No. <i>ERC 03104/ERC 02405/DERR</i> <i>AF504014/ERC03102/ERC99022</i>	Field Logbook No. <i>MS 122904</i> <i>EL-1112 1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>56E0SPC</i>		
Shipped To <i>EDERLINE SERVICES (Formerly TMA) / LVL1</i>	Offsite Property No. <i>A050-069/070</i>						

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml.	60ml.	125ml.	1000ml.	1000ml.	100ml.	250ml.	1000ml.	1000ml.
	<i>4</i>	<i>4</i>		<i>5</i>					
	Nitrosamines - 8070	See item 11 in Special Instructions. <i>348 122001</i>	Carbon-14	See item 12 in Special Instructions. <i>0/0 122104</i>	Gross Alpha, Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium

Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>104530</i>	X	X	X	X	X	X	X	X
J02645	WATER	<i>MS 122804</i>									

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>122904 1330</i>	<i>MS 122104</i> IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate}; Gamma Spec - Add-on {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155};		S-Sol SE-Solvent SO-Solid SL-Sludge W-Water O-Oil A-Air DS-From Solids DL-From Liquid T-Tissue WI-Wipe L-Liquid VS-Vegetation X-Other
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>S. GALE</i>	Date/Time <i>122904 1000</i>			
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>F. 20 E</i>	Date/Time <i>122904 0910</i>	Received By/Stored In <i>[Signature]</i>	Date/Time <i>12-30-04 0910</i>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-004-5	Page 1 of 2
Collector GALE, SJ/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround	
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West	SAF No. B03-004		Air Quality []	45 Days	
Ice Chest No. <i>ERC 03/04/ERC 02405/DERR</i> <i>AFB 04/04/ERC 03/02/ERC 99 022</i>		Field Logbook No. <i>01/22/04</i> <i>EL-5162 1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express			
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>		Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	NaOH to pH = 12 Cool 4C						
	HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
		No. of Container(s)	<i>GV 1</i>	<i>HH 1</i>	<i>HY 1</i>	<i>IZ 1</i>	<i>K* 1</i>	<i>IK 2</i>	<i>IK 4</i>	<i>IK 4</i>	<i>DE 2</i>	<i>N 1</i>
		Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS				Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro- Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12 28 04</i>	<i>1615</i>	X	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X
J02645	WATER												

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix * S=Soil SE=Sediment SO=Solid St=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122804 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>122804 1330</i>	(1) Semi-VOA - 8270A (App IX); Semi-VOA -- 8270A (App IX Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]		
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>SJGALE</i>	Date/Time <i>122904 1000</i>			
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>FED EX</i>	Date/Time <i>12-30-04 0910</i>	Received By/Stored In <i>U. H. ...</i>	Date/Time <i>12-30-04 0910</i>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TPH - Hanford*

Date: *12-30-04*

Purchase Order / Project# /
AF# / SOW# / Release #: *03-004*

LvLI Batch #: *0412L523*

Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0261

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | |
|---|---|--|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# <i>79087416 1267
L L 1278
7914 3232 4999
L L 5013</i> | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3-5
13/10
12/8
5-3</i> °C <i>5-2
5-8</i> | Cooler # | <i>03-102
02-405
99-022
04:04
DEPR</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <i>#001 Y TPH not preserved</i> |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <i>PH</i> |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>TOC</i> <input type="checkbox"/> NIA | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> NIA | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0005	12/28/04	01/03/05	01/08/05
J02643	001 MS	W	05LE0005	12/28/04	01/03/05	01/08/05
J02643	001 MSD	W	05LE0005	12/28/04	01/03/05	01/08/05
J02644	002	W	05LE0005	12/28/04	01/03/05	01/08/05

LAB QC:

PBLKDX	MB1	W	05LE0005	N/A	01/03/05	01/08/05
PBLKDX	MB1 BS	W	05LE0005	N/A	01/03/05	01/08/05

Handwritten signature



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2939/B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-2004

HERBICIDE

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-03-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-08-2005. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. 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

1/24/05
Date

son\group\data\herb\tnu\0412-523 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.



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.

Herbicides, Special List

Report Date: 01/10/05 14:32

RFW Batch Number: 0412L523

Client: TNU-HANFORD B03-004

Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J02643	J02643	J02643	J02644	PBLKDX	PBLKDX BS
	RFW#:	001	001 MS	001 MSD	002	05LE0005-MB1	05LE0005-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate:	DCAA	55 %	66 %	89 %	68 %	74 %	94 %
		=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====
Dalapon		5.0 U	92 %	118 %	5.0 U	5.0 U	114 %
Dicamba		2.0 U	72 %	96 %	2.0 U	2.0 U	104 %
Dichloroprop		5.0 U	57 %	76 %	5.0 U	5.0 U	79 %
2,4-D		1.0 U	71 %	93 %	1.0 U	1.0 U	97 %
2,4,5-TP (Silvex)		0.50 U	70 %	96 %	0.50 U	0.50 U	103 %
2,4,5-T		0.50 U	66 %	92 %	0.50 U	0.50 U	97 %
2,4-DB		5.0 U	84 %	110 %	5.0 U	5.0 U	104 %
Dinoseb		0.50 U	52 %	67 %	0.50 U	0.50 U	76 %

Handwritten signature/initials

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 3
Collector GALE, SJ/SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Price Code 7N Data Turnaround 45 Days
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/AF304014/ERC 03102/ERC 99022</i>		Field Logbook No. <i>4/122904</i> <i>EL-434621518-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>		Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>		

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
No. of Container(s)	<i>LN 3</i>	<i>WT 2</i>	<i>YZ 2</i>	<i>AB 2</i>	<i>TA 1</i>	<i>CC 1</i>	<i>A 1</i>	<i>WT 2</i>	<i>A-C 3</i>	<i>O 1</i>
Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL

SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	Oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 1/1 in Special Instructions <i>2/2/2004</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 2/2 in Special Instructions <i>2/2/2004</i>	TOC - 9060
Sample No.	Matrix *	Sample Date	Sample Time								

J02643	WATER	<i>12.25.04</i>	<i>1015</i>	X	X	X	X	X	X	X	X
J02644	WATER	<i>12.28.04</i>	<i>1030</i>	X	X	X	X	X	X	X	X
J02645	WATER	<i>12.28.04</i>	<i>0720</i>							X	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	2/1 ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Silicon, Thallium, Tin); Mercury - 7470 - (CV) 3/2 VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran);		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
<i>SJGALE</i>	<i>122904 1330</i>	<i>REF 2A</i>	<i>1228 04 1330</i>			
<i>REF 2A</i>	<i>122904 1000</i>	<i>SJGALE</i>	<i>122904 1000</i>			
<i>SJGALE</i>	<i>122904 1000</i>	<i>FED EX</i>				
<i>FED EX</i>	<i>12-30-04 0910</i>	<i>[Signature]</i>	<i>12-30-04 0910</i>			

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

Collector: GALE, SJ/SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, JH Price Code: 7N Data Turnaround: 45 Days
 Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality: []

Ice Chest No. ERC 03104/ERC 02405/DERR Field Logbook No. MS 122904 COA: PERDFZ 2560 Method of Shipment: Federal Express
AFB04014/ERC03102/ERC99022 EL: 1518-2 Bill of Lading/Air Bill No. SEE OSPC
 Shipped To: EDBERTINE SERVICES (Formerly TMA) / LVL1 Offsite Property No.: A050-069/070

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml.	60mL	125ml.	1000ml.	1000ml.	100mL	250ml.	1000mL	1000ml.

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Nitrosamines - 8070	See item 15 in Special Instructions.	Carbon-14	See item 17 in Special Instructions.	Gross Alpha; Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
J02643	WATER	12 25 04	1015	X	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	104530	X	X	X	X	X	X	X	X	X
J02645	WATER		MS 122809									

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
S. GALE	122904 1330	REF 2A	122804 1330
REF 2A	122904 1000	S. GALE	122904 1000
S. GALE	122904 1000	FED EX	
F. J. [Signature]	123004 0910	[Signature]	123004 0910

SPECIAL INSTRUCTIONS

4.1 IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate}

5.2 Gamma Spec - Add-on {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Matrix *

- S=Soil
- SE=Soliment
- SO=Solid
- SI=Sludge
- W=Water
- O=Oil
- A=Air
- DS=Drum Solids
- DL=Drum Liquid
- 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: _____

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 1 of 2				
Collector GALE, S./SINGLTON K.			Company Contact Jack Donnelly			Telephone No. 372-9565			Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days				
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West			SAF No. B03-004			Air Quality <input type="checkbox"/>		45 Days				
Ice Chest No. <u>ERC03/04/ERC02405/DERR/</u> <u>AFB04/014/ERC03/02/ERC99/022</u>			Field Logbook No. <u>SP/22904</u> <u>EL-1518-2</u>			COA <u>PERDF2 2560</u>			Method of Shipment Federal Express						
Shipped To EBERLINE SERVICES (Formerly TMA) <u>(LVL1)</u>			Offsite Property No. <u>A050-069/070</u>			Bill of Lading/Air Bill No. <u>SEE OSPC</u>									
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH = 12 Cool 4C	
				Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	aG	G/P
				No. of Container(s)	<u>6</u> 1	<u>4</u> 1	<u>1</u> 1	<u>1</u> 1	<u>1</u> 1	<u>2</u> 1	<u>4</u> 1	<u>4</u> 1	<u>2</u> 1	<u>1</u> 1	
				Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Carbonyl - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010		
Sample No.	Matrix *	Sample Date	Sample Time												
J02643	WATER	<u>12 28 04</u>	<u>1015</u>	X	X	X	X	X	X	X	X	X	X		
J02644	WATER	<u>12 28 04</u>	<u>1030</u>	X	X	X	X	X	X	X	X	X	X		
J02645	WATER														
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *		
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Semi-VOA - 8270A (App 1X); Semi-VOA -- 8270A (App 1X Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]					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 N=Other		
<u>SJGALE</u>		<u>122804 1330</u>		<u>REF 2A</u>		<u>122804 1330</u>									
<u>REF 2A</u>		<u>122904 1000</u>		<u>SJGALE</u>		<u>122904 1000</u>									
<u>SJGALE</u>		<u>122904 1000</u>		<u>FED EX</u>											
<u>FED EX</u>		<u>12-30-04 0910</u>		<u>REF 2A</u>		<u>12-30-04 0910</u>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By				Title				Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method				Disposed By				Date/Time					

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

Date: *12-30-04*

CLIENT: *TPH - Hanford*

Purchase Order / Project# /
 AF# / SOW# / Release #: *B03-004*

Lvl Batch #: *0412L523*

Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0201

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|---|---|---|----------|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 5. Samples received cooled or ambient? | Temp <i>3-5</i> <i>5-2</i>
<i>13/10</i> °C <i>5-8</i>
<i>12/8</i>
<i>5-3</i> | Cooler # | <i>ERC-03-104</i>
<i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:04</i>
<i>DERR</i> | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | <i>#001 Y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | <i>PH</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>TOC</i> <input type="checkbox"/> N/A | <i>Head space</i> | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A | | |
| 15. Shipment meets Lvl Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | | |



Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B03-004 *H2939*

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002 MS	W	05LE0002	12/28/04	01/03/05	01/05/05
J02644	002 MSD	W	05LE0002	12/28/04	01/03/05	01/05/05

LAB QC:

PBLKDY	MB1	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BS	W	05LE0002	N/A	01/03/05	01/05/05
PBLKDY	MB1 BSD	W	05LE0002	N/A	01/03/05	01/05/05

Jan 14/05



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2939 /B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-2004

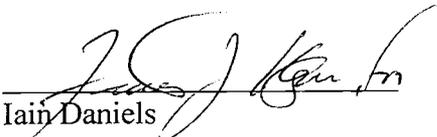
PCB

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-03-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 01-05-2005. 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 and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. 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

1/24/05
Date

som\tr\group\data\pest\tnu hanford\0412-523.pcb
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.

PCBs by GC

Report Date: 01/06/05 10:41

RFW Batch Number: 0412L523

Client: TNU-HANFORD B03-004

Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J02643	J02644	J02644	J02644	PBLKDY	PBLKDY BS
	RFW#:	001	002	002 MS	002 MSD	05LE0002-MB1	05LE0002-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	56 %	42 %	47 %	56 %	55 %	47 %
	Decachlorobiphenyl	50 %	43 %	45 %	51 %	65 %	54 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Aroclor-1016		0.40 U	0.40 U	67 %	72 %	0.40 U	68 %
Aroclor-1221		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		0.40 U	0.40 U	65 %	71 %	0.40 U	64 %

Cust ID: PBLKDY BSD

Sample Information	RFW#:	05LE0002-MB1
	Matrix:	WATER
	D.F.:	1.00
	Units:	UG/L

Surrogate:	Tetrachloro-m-xylene	59 %
	Decachlorobiphenyl	56 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====		
Aroclor-1016		77 %
Aroclor-1221		0.40 U
Aroclor-1232		0.40 U
Aroclor-1242		0.40 U
Aroclor-1248		0.40 U
Aroclor-1254		0.40 U
Aroclor-1260		72 %

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

Handwritten signature/initials

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 3
Collector GALE, S/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality		45 Days	
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/AF304014/ERC 03102/ERC 99022</i>	Field Logbook No. <i>4A122504 EL4516215B-2</i>	COA <i>RERDF2 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>	
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>	Offsite Property No. <i>A050-069/070</i>					

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
No. of Container(s)	<i>LN 3</i>	<i>WT 2</i>	<i>YE 2</i>	<i>YB 2</i>	<i>YD 1</i>	<i>CE 1</i>	<i>A 1</i>	<i>WT 2</i>	<i>A-C 3</i>	<i>0 1</i>
Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL

SAMPLE ANALYSIS				Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item (2) in Special Instructions <i>AJA 122104</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item (2) in Special Instructions <i>AJA 122104</i>	TOC - 9060
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X
J02645	WATER	<i>12-23-04</i>	<i>0720</i>									X	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>122804 1330</i>	2M ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Silicon, Thallium, Tin); Mercury - 7470 - (CV) 3M VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran);		S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>SJGALE</i>	Date/Time <i>122904 1000</i>			
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>FED EX</i>	Date/Time <i>12-30-04 0910</i>	Received By/Stored In <i>V. [Signature]</i>	Date/Time <i>12-30-04 0910</i>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 1 of 1	
Collector GALE, S/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, III		Price Code 7N	Data Turnaround	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality []		45 Days		
Ice Chest No. <i>ERC 03104 / ERC 02405 / DERR / AFD 04014 / ERC 03102 / ERC 99022</i>	Field Logbook No. <i>AJD 122904</i> <i>EL-1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>		
Shipped To <i>EBERLINE SERVICES (Formerly TMA) / LVL1</i>	Offsite Property No. <i>A050-069/070</i>						

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
	Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
	No. of Container(s)	2	1	1	1	2	1	1	4	1
	Volume	1000ml. <i>2 x 1000</i>	60mL <i>4</i>	125mL	1000ml. <i>5</i>	1000ml.	100mL	250mL	1000mL	1000ml.

SAMPLE ANALYSIS				Nitrosamines - 8070	See item (1) in Special Instructions. <i>AJD 122904</i>	Carbon-14	See item (2) in Special Instructions. <i>AJD 122904</i>	Gross Alpha Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1015 30</i>	X	X	X	X	X	X	X	X	X
J02645	WATER		<i>AJD 122809</i>									

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix *
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>122804 1330</i>	<i>AJD 122904</i> 4.15 IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate} 5.25 Gamma Spec - Add-on {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}		S=Sol SE=Sediment SO=Solid SL=Sludge W=Water U=Oil A=Air DS=Dry Solid DL=Dry Liquid T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>S. GALE</i>	Date/Time <i>122904 1000</i>			
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>123004 0910</i>	Received By/Stored In <i>J. P. [Signature]</i>	Date/Time <i>12-30-04 0910</i>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-004-5	Page 1 of 3
Collector GALE, S./SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JII		Price Code 7N	Data Turnaround 45 Days	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality []				

Ice Chest No. <u>ERC03/04/ERC02405/DERR/</u> <u>AF5 04/14/ERC03/02/ERC99022</u>	Field Logbook No. <u>01/21/04</u> <u>EL-1518-2</u>	COA <u>PERDFZ 2560</u>	Method of Shipment Federal Express
Shipped To EBERLINE SERVICES (Formerly TMA) <u>(LVL1)</u>	Offsite Property No. <u>A050-069/070</u>	Bill of Lading/Air Bill No. <u>SEE OSPC</u>	

POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	None	ZnAc+NaOH to pH > 9 Cool	Cool 4C	NaOH to pH = 12 Cool 4C					
	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
	No. of Container(s)	<u>6</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>4</u>	<u>2</u>	<u>1</u>
	Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS				Carbenyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	12 28 04	1015	X	X	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	1030	X	X	X	X	X	X	X	X	X	X
J02645	WATER												

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		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
Relinquished By/Removed From <u>SJGALE</u>	Date/Time <u>122804 1330</u>	Received By/Stored In <u>REF 2A</u>	Date/Time <u>122804 1330</u>	(1) Semi-VOA - 8270A (App 1X); Semi-VOA -- 8270A (App 1X Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]		
Relinquished By/Removed From <u>REF 2A</u>	Date/Time <u>122904 1000</u>	Received By/Stored In <u>SJGALE</u>	Date/Time <u>122904 1000</u>			
Relinquished By/Removed From <u>SJGALE</u>	Date/Time <u>122904 1000</u>	Received By/Stored In <u>FED EX</u>	Date/Time			
Relinquished By/Removed From <u>FED EX</u>	Date/Time <u>12-30-04 0910</u>	Received By/Stored In <u>[Signature]</u>	Date/Time <u>12-30-04 0910</u>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TPH - Hanford*

Date: *12-30-04*

Purchase Order / Project# /
SAF# / SOW# / Release #: *003-004*

LvLI Batch #: *0412L523*

Sample Custodian: *[Signature]*

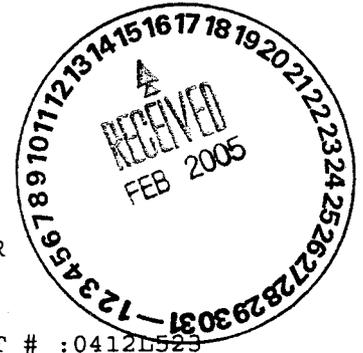
7914 3232 4966 FORM 0201

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|---|-----------------------------------|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267
L L 1278
7914 3232 4999
L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3.5
13/10
12/8
5-3</i> °C <i>5-2
5-8</i> | Cooler # | | <i>03-102
02-405
99-022
04:014
DERR</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | <i>#001 y TPH not preserved</i> |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | <i>PH</i> |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> TOC | <input type="checkbox"/> N/A | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <input type="checkbox"/> No Discrepancies | |

Lionville Laboratory, Inc.
 8310 ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939



DATE RECEIVED: 12/30/04

LVL LOT # :0412D523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0008	12/28/04	01/04/05	01/18/05
J02643	001 MS	W	05LE0008	12/28/04	01/04/05	01/18/05
J02643	001 MSD	W	05LE0008	12/28/04	01/04/05	01/18/05
J02644	002	W	05LE0008	12/28/04	01/04/05	01/18/05

LAB QC:

BLK	MB1	W	05LE0008	N/A	01/04/05	01/18/05
BLK	MB1 BS	W	05LE0008	N/A	01/04/05	01/18/05

Handwritten signature/initials



Case Narrative

Client: TNU-HANFORD B03-004
LVL #: 0412L523
SDG/SAF # H2939/B03-004

W.O. #: 11343-606-001-9999-00
Date Received: 12-30-2004

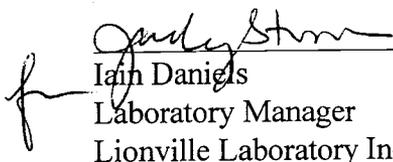
PAH

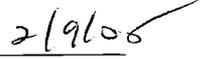
Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-04-2005 and analyzed according to criteria set for the in Lionville Laboratory SOPs based on SW846, 3rd Edition for Polyaromatic Hydrocarbons on 01-18-2005. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8310.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. One (1) of sixteen (16) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

som\group\data\pah\tnu hanford\0412-523.doc

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



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.

PAH'S by HPLC / Method 8310

Report Date: 02/03/05 10:57

RFW Batch Number: 0412L523

Client: TNUHANFORD B03-004 H2939 Work Order: 11343606001 Page: 1

Sample Information	Cust ID:	J02643	J02643	J02643	J02644	BLK	BLK BS					
	RFW#:	001	001 MS	001 MSD	002	05LE0008-MB1	05LE0008-MB1					
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER					
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00					
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L					
Triphenylene	110	%	109	%	72	%	114	%	88	%	119	%
Naphthalene	1.0	U	82	%	60	%	1.0	U	1.0	U	86	%
Acenaphthylene	1.0	U	84	%	52	%	1.0	U	1.0	U	80	%
Acenaphthene	1.0	U	110	%	74	%	1.0	U	1.0	U	148	* %
Fluorene	0.10	U	89	%	60	%	0.10	U	0.10	U	90	%
Phenanthrene	0.10	U	88	%	60	%	0.10	U	0.10	U	94	%
Anthracene	0.10	U	93	%	63	%	0.10	U	0.10	U	100	%
Fluoranthene	0.20	U	87	%	60	%	0.20	U	0.20	U	90	%
Pyrene	0.20	U	75	%	52	%	0.20	U	0.20	U	82	%
Benzo (a) anthracene	0.10	U	89	%	56	%	0.10	U	0.10	U	88	%
Chrysene	0.10	U	80	%	56	%	0.10	U	0.10	U	82	%
Benzo (b) fluoranthrene	0.10	U	84	%	58	%	0.10	U	0.10	U	88	%
Benzo (k) fluoranthrene	0.10	U	90	%	62	%	0.10	U	0.10	U	88	%
Benzo (a) pyrene	0.10	U	89	%	60	%	0.10	U	0.10	U	93	%
Dibenzo (a, h) anthracene	0.10	U	88	%	58	%	0.10	U	0.10	U	91	%
Benzo (ghi) perylene	0.10	U	81	%	54	%	0.10	U	0.10	U	83	%
Indeno (1, 2, 3-cd) pyrene	0.10	U	88	%	59	%	0.10	U	0.10	U	91	%

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

Handwritten signature/initials

00000000

Collector: GALE, S/SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, JH Price Code: 7N Data Turnaround: 45 Days

Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality: 45 Days

Ice Chest No.: ERC 03104/ERC 02405/DEK/AF504014/ERC 03102/ERC 99022 Field Logbook No.: 4A122504 COA: RERDF2 2560 Method of Shipment: Federal Express

Shipped To: EBELINE SERVICES (Formerly TMA) (LVL1) Offsite Property No.: A050-069/070 Bill of Lading/Air Bill No.: SEE OSPC

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
	Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
	No. of Container(s)	LN 3	WT 2	YZ 2	YZ 2	YZ 1	CC 1	DA 1	WT 2	A-C 3	0 1
	Volume	40mL	1000ml	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL

SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 21 in Special Instructions 2AS 122104	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 22 in Special Instructions 2A 122104	TOC - 9060
-----------------	--	---	---------------------	---------------------------	-----------------------------	--	---------------------	-----------------	-------------	---	------------

Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	12-25-04	1015	X	X	X	X	X	X	X	X	X
J02644	WATER	12-28-04	1030	X	X	X	X	X	X	X	X	X
J02645	WATER	12-28-04	0720							X		

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time	
SJOACE		122804 1330		REF 2A		122804 1330	
REF 2A		122904 1000		SJOACE		122904 1000	
SJOACE		122904 1000		FED EX			
FED EX		12-30-04 0910		V. [Signature]		12-30-04 0910	

Matrix *
 S=Soil
 SE=Substrate
 SO=Solid
 SL=Sludge
 W=Water
 O=Oil
 A=Air
 DS=Drum Solids
 DL=Drum Liquid
 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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 3 of 3	
Collector GALE, S/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JII		Price Code 7N	Data Turnaround 45 Days	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality				
Ice Chest No. <i>ERC 03 104 / ERC 02 405 / DERR / AFB 04 014 / ERC 03 102 / ERC 99 022</i>	Field Logbook No. <i>1229 04</i> <i>EL-1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>		
Shipped To <i>EDERLINE SERVICES (Formerly TMA) / LVL1</i>	Offsite Property No. <i>A050-069/070</i>						

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml. <i>4 MM</i>	60ml. <i>4</i>	125ml.	1000ml. <i>5</i>	1000ml.	100ml.	250ml.	1000ml.	1000ml.

SAMPLE ANALYSIS				Nitrosamines - 8070	See item 11 in Special Instructions. <i>12/21/04</i>	Carbon-14	See item 12 in Special Instructions. <i>12/21/04</i>	Gross Alpha Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1045 30</i>	X	X	X	X	X	X	X	X	X
J02645	WATER		<i>12/28/04</i>									

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
<i>S. GALE</i>	<i>122804 1330</i>	<i>REFZA</i>	<i>122804 1330</i>
<i>REFZA</i>	<i>122904 1000</i>	<i>S. GALE</i>	<i>122904 1000</i>
<i>S. GALE</i>	<i>122904 1000</i>	<i>FED EX</i>	
<i>FED EX</i>	<i>123004 0910</i>	<i>J. P. [Signature]</i>	<i>123004 0910</i>
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

12/21/04

IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate)

Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Matrix *

S= Soil
SL= Sediment
SO= Solid
SL= Sludge
W= Water
O= Oil
A= Air
DS= Drum Solids
DL= Drum Liquid
F= Fugate
WI= Waste
L= Liquid
V= Vegetation
N= Other

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

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 1 of 3			
Collector GALE, S/SINGLTON K.			Company Contact Jack Donnelly			Telephone No. 372-9565			Project Coordinator KESSNER, JII		Price Code 7N Data Turnaround 45 Days			
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West			SAF No. B03-004			Air Quality		45 Days			
Ice Chest No. <u>ERC 03104/ERC02405/DERR</u> <u>AFS 04014/ERC03102/ERC99022</u>			Field Logbook No. <u>SP122904</u> EL- 1162 <u>1518-2</u>		COA <u>PERDFZ 2560</u>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <u>SEE OSPC</u>					
Shipped To EBERLINE SERVICES (Formerly TMA) <u>(LVL1)</u>			Offsite Property No. <u>A050-069/070</u>											
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.			Preservation	Cool 4C	Note	ZnAc+KOH to pH 5.9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH = 12 Cool 4C		
			Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P	
			No. of Container(s)	<u>G⁸ 1</u>	<u>HH 1</u>	<u>W 1</u>	<u>S 1</u>	<u>KK 1</u>	<u>JK 2</u>	<u>FF 4</u>	<u>DS 4</u>	<u>DE 2</u>	<u>V 1</u>	
			Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS			Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 100.1	TSS - 100.2	Chloro-Herbicides - EPAS151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010		
			Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	12 28 04	1015	X	X	X	X	X	X	X	X	X		
J02644	WATER	12 28 04	1030	X	X	X	X	X	X	X	X	X		
J02645	WATER													
CHAIN OF POSSESSION			Sign/Print Names				SPECIAL INSTRUCTIONS							
Relinquished By/Removed From <u>SJGALE</u>			Date/Time <u>122804 1330</u>		Received By/Stored In <u>REF 2H</u>		Date/Time <u>122804 1330</u>		(1) Semi-VOA - 8270A (App IX); Semi-VOA - 8270A (App IX Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]				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 N=Other	
Relinquished By/Removed From <u>REF 2A</u>			Date/Time <u>122904 1000</u>		Received By/Stored In <u>SJGALE</u>		Date/Time <u>122904 1000</u>							
Relinquished By/Removed From <u>SJGALE</u>			Date/Time <u>122904 1000</u>		Received By/Stored In <u>FED EX</u>		Date/Time							
Relinquished By/Removed From <u>Fed Ex</u>			Date/Time <u>12-30-04 0910</u>		Received By/Stored In <u>U. Hanford</u>		Date/Time <u>12-30-04 0910</u>							
Relinquished By/Removed From			Date/Time		Received By/Stored In		Date/Time							
Relinquished By/Removed From			Date/Time		Received By/Stored In		Date/Time							
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

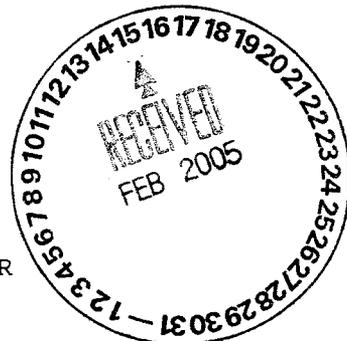
Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TPH - Homford*
 Purchase Order / Project# /
 SAF# / SOW# / Release #: *B03-004*
 LvLI Batch #: *0412L523*

Date: *12-30-04*
 Sample Custodian: *[Signature]*
 7914 3232 4966 FORM 0201
 7908 7416 1290

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | | |
|---|--|--|--|--|
| 1. Samples Hand Delivered of <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp <i>3.5</i>
<i>13.10</i>
<i>12.8</i>
<i>5.3</i> | °C <i>5-2</i>
<i>5-8</i> | Cooler# | <i>ERC-03-104</i>
<i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:014</i>
<i>DEER</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |



Lionville Laboratory, Inc.
GCSC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05GCX001	12/28/04	01/04/05	01/04/05
J02643	001 MS	W	05GCX001	12/28/04	01/04/05	01/04/05
J02643	001 MSD	W	05GCX001	12/28/04	01/04/05	01/04/05
J02644	002	W	05GCX001	12/28/04	01/04/05	01/04/05

LAB QC:

BLK	MB1	W	05GCX001	N/A	01/04/05	01/04/05
BLK	MB1 BS	W	05GCX001	N/A	01/04/05	01/04/05

Handwritten signature and date: 2/3/05



Case Narrative

Client: TNU-HANFORD B03-004
LVL #: 0412L523
SDG/SAF # H2939/B03-004

W.O. #: 11343-606-001-9999-00
Date Received: 12-30-2004

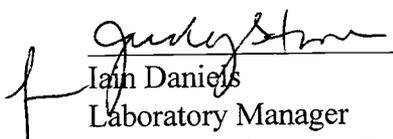
GC SCAN BY FID

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were prepared and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures, method 8015B for Methanol and 1-Butanol on 01-04-2005.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
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. 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

2/9/05
Date

som:\group\data\gsc\0412-523.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.

000002



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.

	Cust ID:	J02643	J02643	J02643	J02644	BLK	BLK BS
Sample	RFW#:	001	001 MS	001 MSD	002	05GCX001-MB1	05GCX001-MB1
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
3-Pentanol		121 %	114 %	119 %	117 %	109 %	112 %
=====fl=====		=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====	=====fl=====
Methanol		5.0 U	125 %	128 %	5.0 U	5.0 U	127 %
1-Butanol		5.0 U	122 %	126 %	5.0 U	5.0 U	123 %

RE 2/3/05

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 2 of 2	
Collector GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround	
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality		45 Days			
Ice Chest No. <i>ERC 03104/ERL02405/DEAR/AFS04014/ERC03102/ERL9902L</i>		Field Logbook No. <i>4/122504</i> <i>EL-516-215B-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>			
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>		Offsite Property No. <i>A050-069/070</i>									
POSSIBLE SAMPLE HAZARDS/REMARKS											
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.											
Preservation		Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool
Type of Container		aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
No. of Container(s)		<i>L 3</i>	<i>W 2</i>	<i>Y 2</i>	<i>Z 2</i>	<i>AA 1</i>	<i>CC 1</i>	<i>DD 1</i>	<i>EE 2</i>	<i>FF 3</i>	<i>GG 1</i>
Volume		40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL
SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 1-Butanol, Methanol;	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item (2) in Special Instructions <i>2</i> <i>AJA 122104</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item (2) in Special Instructions. <i>AJA 122104</i>	TOC - 9060
Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X
J02645	WATER	<i>12-28-04</i>	<i>0720</i>							X	
CHAIN OF POSSESSION											
Sign/Print Names				SPECIAL INSTRUCTIONS							
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		2 <i>AJA 122104</i> 3 ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Silicon, Thallium, Tin); Mercury - 7470 - (CV) 3 VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran);			
<i>SJGALE</i>		<i>122904 1330</i>		<i>REF 2A</i>		<i>122804 1330</i>					
<i>REF 2A</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>					
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>							
<i>FED EX</i>		<i>12-30-04 0910</i>		<i>V. J. ...</i>		<i>12-30-04 0910</i>					
LABORATORY SECTION		Received By		Title		Date/Time		Matrix *			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time		S=Soil SE=Soilment 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			

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 1 of 3
Collector GALE, S./SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JII		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality		45 Days	

Ice Chest No. <i>ERC 03104/ERC 02405/DERR</i> <i>AFB04014/ERC03102/ERC99022</i>	Field Logbook No. <i>AJD 122904</i> <i>EL-114-1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express
Shipped To <i>EDBERTINE SERVICES (Formerly TMA) / LVL1</i>	Offsite Property No. <i>A050-069/070</i>	Bill of Lading/Air Bill No. <i>SEE OSPC</i>	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2	
	HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
		No. of Container(s)	2	1	1	1	2	1	1	4	1
		Volume	1000ml. <i>4 MIN</i>	60mL <i>4</i>	125ml.	1000ml. <i>5</i>	1000ml.	100mL	250mL	1000mL	1000ml.

SAMPLE ANALYSIS				Nitrosamines - 8070	See item 1 in Special Instructions. <i>AJD 122904</i>	Carbon-14	See item 2 in Special Instructions. <i>AJD 122904</i>	Gross Alpha Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X		X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>104530</i>	X		X	X	X	X	X	X	X
J02645	WATER		<i>AJD 122604</i>									

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS <i>AJD 122904</i> KX IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate); 521 Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155);	Matrix * S-Sol SE-Solvent SO-Solid SL-Sludge W-Water O-Oil A-Air DS-Dry Solids DL-Dry Liquid T-Tissue WT-Wipe L-Liquid V-Vegetation N-Nutrient
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122804 1330</i>	Received By/Stored In <i>REF 2A</i>	Date/Time <i>122804 1330</i>		
Relinquished By/Removed From <i>REF 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>S. GALE</i>	Date/Time <i>122904 1000</i>		
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time		
Relinquished By/Removed From <i>F. J. O'Connell</i>	Date/Time <i>122904 0910</i>	Received By/Stored In <i>[Signature]</i>	Date/Time <i>12 30 04 0910</i>		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time		

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

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 1 of 2					
Collector GALE, S/SINGLETON K.			Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JII		Price Code 7N		Data Turnaround					
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West		SAF No. B03-004				Air Quality []		45 Days					
Ice Chest No. <u>ERC 03/04/ERC02405/DERR</u> <u>AF5 04/04/ERC03/02/ERC99022</u>			Field Logbook No. <u>S/S 122904</u> <u>EL-1162 1518-2</u>		COA <u>PERDFZ 2560</u>		Method of Shipment Federal Express									
Shipped To EBERLINE SERVICES (Formerly TMA) <u>(LVL1)</u>			Offsite Property No. <u>A050-069/070</u>		Bill of Lading/Air Bill No. <u>SEE OSPC</u>											
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.			Preservation		Cool 4C	None	ZnAc+NaOH to pH=9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH = 12 Cool 4C		
			Type of Container		aG	P	G/P	G/P	G/P	aG	aG	aG	aG	aG	G/P	
			No. of Container(s)		<u>6¹</u>	<u>1¹</u>	<u>1¹</u>	<u>1¹</u>	<u>1¹</u>	<u>1²</u>	<u>1⁴</u>	<u>1⁴</u>	<u>1²</u>	<u>1¹</u>		
			Volume		500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL		
SAMPLE ANALYSIS			Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9010	TDS - 100.1	TSS - 100.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010				
Sample No.	Matrix *	Sample Date	Sample Time													
J02643	WATER	<u>12 28 04</u>	<u>1015</u>	X	X	X	X	X	X	X	X	X	X			
J02644	WATER	<u>12 28 04</u>	<u>1030</u>	X	X	X	X	X	X	X	X	X	X			
J02645	WATER															
CHAIN OF POSSESSION			Sign/Print Names				SPECIAL INSTRUCTIONS									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time	(1) Semi-VOA - 8270A (App IX); Semi-VOA -- 8270A (App IX Add-On) {1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol}						Matrix * S=Soil SE=Sediment SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation N=Other				
S JGALE <u>S/D</u>		<u>122804 1330</u>	REF ZA		<u>12 28 04 1330</u>											
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time											
REF ZA		<u>122904 1000</u>	S JGALE <u>S/D</u>		<u>122904 1000</u>											
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time											
S JGALE <u>S/D</u>		<u>122904 1000</u>	FED EX													
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time											
FED EX		<u>12-30-04 0910</u>	V. A. [Signature]		<u>12-30-04 0910</u>											
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time											
LABORATORY SECTION		Received By		Title		Date/Time										
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time										

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TPH - Hartford*

Date: *12-30-04*

Purchase Order / Project# /
 SAF# / SOW# / Release #: *603-004*

Sample Custodian: *[Signature]*
 7914 3232 4966 FORM 0261

LvLI Batch #: *0412L 523*

NOTE: EXPLAIN ALL DISCREPANCIES 7908 7416 1290

- | | | | | |
|---|---|-----------------------------------|--|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | <i>ERC-03-104</i>
<i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04:014</i>
<i>DEER</i> |
| 5. Samples received cooled or ambient? | Temp <i>3-5</i>
<i>13/10</i>
<i>12/8</i>
<i>5-3</i> | °C <i>5-2</i>
<i>5-8</i> | Cooler # | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | <i>#001 y TPH not preserved</i> |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | <i>PH</i> |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>TOC</i> | <input type="checkbox"/> N/A | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <input type="checkbox"/> No Discrepancies | |

Lionville Laboratory, Inc.
 DRO ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939



DATE RECEIVED: 12/30/04

LVL LOT # : 04-221523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LE0007	12/28/04	01/04/05	01/06/05
J02643	001 MS	W	05LE0007	12/28/04	01/04/05	01/06/05
J02643	001 MSD	W	05LE0007	12/28/04	01/04/05	01/06/05
J02644	002	W	05LE0007	12/28/04	01/04/05	01/06/05

LAB QC:

BLK	MB1	W	05LE0007	N/A	01/04/05	01/06/05
BLK	MB1 BS	W	05LE0007	N/A	01/04/05	01/06/05

Handwritten signature



Case Narrative

Client: TNU-HANFORD B03-004
LVL #: 0412L523
SDG/SAF # H2939/B03-004

W.O. #: 11343-606-001-9999-00
Date Received: 12-30-2004

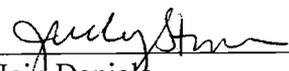
DIESEL RANGE ORGANICS

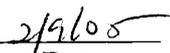
Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were extracted on 01-04-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 01-06-2005. The analysis was based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The method blank was below the reporting limits for the target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were outside the acceptance criteria for the surrogate. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
9. The samples were preserved with HCL. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated


Date

som\vr:\group\data\dro\tnu hanford\0412-523.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 1 2 pages.

00000002

Initiator: John Leach Batch: 0412L523 Parameter: DRO
 Date: 1/3/05 Samples: All Matrix: WATER
 Client: TUV Method: SW846/MCAWW/CLPI Prep Batch: 05LE0007

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)
Surrogate elevated in CV prior to samples @ 32% Limit 25%

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Narrate. DRO in control.
 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: _____
 Concur with Proposed Action
 Disagree with Proposed Action; See Instruction
 Include in Case Narrative
 Client Contacted:
 Date/Person _____
 Add
 Cancel

5. Final Action...signature/date: [Signature] Other Explanation:
 Verified re-[log][leach][extract][digest][analysis] (circle)
 Included in Case Narrative
 Hard Copy COC Revised
 Electronic COC Revised
 EDD Corrections Completed

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
<input checked="" type="checkbox"/>	Initiator	<input type="checkbox"/>	Metals: Beegle
<input checked="" type="checkbox"/>	Lab General Manager: M. Taylor	<input type="checkbox"/>	Inorganic: Perrone
<input checked="" type="checkbox"/>	Project Mgr. Stone/Johnson/Haslett	<input type="checkbox"/>	GC/LC: Kiger
<input checked="" type="checkbox"/>	Technical Mgr. Wesson/Daniels	<input type="checkbox"/>	MS: Rychlak/Layman
<input checked="" type="checkbox"/>	QA (file): Alberts	<input type="checkbox"/>	Log-in: Melnic
<input type="checkbox"/>	Data Management: Feldman	<input type="checkbox"/>	Admin: Soos
<input type="checkbox"/>	Sample Prep: Beegle/Kiger	<input type="checkbox"/>	Other: _____



Lionville Laboratory, Inc.
 DIESEL RANGE ORGANICS BY GC

Report Date: 01/31/05 13:40

RFW Batch Number: 0412L523

Client: TNUHANFORD B03-004 H2939 Work Order: 11343606001 Page: 1

	Cust ID:	J02643	J02643	J02643	J02644	BLK	BLK BS
Sample	RFW#:	001	001 MS	001 MSD	002	05LE0007-MB1	05LE0007-MB1
Information	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
		81 %	94 %	96 %	57 %	87 %	77 %
		fl	fl	fl	fl	fl	fl
Diesel Range Organics		303 U	65 %	71 %	300 U	300 U	52 %

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

Handwritten signature and date: 2/1/05

Bechtel Hanford Inc.				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 2 of 3					
Collector GALE, S/SINGLTON K.				Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days					
Project Designation ERDF - Full List Leachate Analysis				Sampling Location ERDF - 200 West				SAF No. B03-004		Air Quality		45 Days					
Ice Chest No. <i>ERC 03104/ERL02405/DEAR/AF304014/ERC03102/ERL99022</i>				Field Logbook No. <i>SA122504 EL-1516-2 1518-2</i>		COA <i>REDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>							
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>				Offsite Property No. <i>A050-069/070</i>													
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation		Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool		
				Type of Container		aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*		
				No. of Container(s)		<i>LH 3</i>	<i>WT 2</i>	<i>YL 2</i>	<i>TA 2</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>A-C 3</i>	<i>0</i>	<i>1</i>
				Volume		40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL		
SAMPLE ANALYSIS				Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	Oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item <i>2</i> in Special Instructions <i>SA 122504</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item <i>3</i> in Special Instructions. <i>SA 122504</i>	TOC - 9060				
Sample No.	Matrix *	Sample Date	Sample Time														
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X	X			
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X	X			
J02645	WATER	<i>12-23-04</i>	<i>0720</i>										X				
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		<i>SA 122504</i> 2x ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) [Arsenic, Lead, Selenium, Silicon, Thallium, Tin]; Mercury - 7470 - (CV) 3x VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) [1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran];						S=Soil SE=Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other			
<i>SJGALE</i>		<i>122904 1330</i>		<i>REF 2A</i>		<i>122804 1330</i>											
<i>REF 2A</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>											
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>													
<i>FED EX</i>		<i>12-30-04 0910</i>		<i>FED EX</i>		<i>12-30-04 0910</i>											
LABORATORY SECTION	Received By	Title						Date/Time									
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By						Date/Time									

Collector: GALE, SJ/SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KESSNER, JH Price Code: 7N Data Turnaround: 45 Days
 Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality: []

Ice Chest No.: ERC 03104/ERC 02405/DERR Field Logbook No.: AS 122904 COA: RERDFZ 2560 Method of Shipment: Federal Express
AF004014/ERC03102/ERC99022 EL-1518-2 Bill of Lading/Air Bill No.: SEE OSPC

Shipped To: EDERLINE SERVICES (Formerly TMA) / LVL1 Offsite Property No.: A050-069/070

POSSIBLE SAMPLE HAZARDS/REMARKS: HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml.	60mL	125ml.	1000ml.	1000ml.	100mL	250ml.	1000mL	1000ml.

SAMPLE ANALYSIS

	Nitrosamines - 8070	See item 11 in Special Instructions.	Carbon-14	See item 12 in Special Instructions.	Gross Alpha: Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
		<u>See item 11 in Special Instructions. AS 122904</u>		<u>See item 12 in Special Instructions. AS 122904</u>					

Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	12-25-04	1015	X	X	X	X	X	X	X	X
J02644	WATER	12-28-04	104530	X	X	X	X	X	X	X	X
J02645	WATER		AS 122809								

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
<u>S. GALE</u>	<u>122904 1330</u>	<u>REF 2A</u>	<u>122904 1330</u>
<u>REF 2A</u>	<u>122904 1000</u>	<u>S. GALE</u>	<u>122904 1000</u>
<u>S. GALE</u>	<u>122904 1000</u>	<u>FED EX</u>	
<u>F. Q. O.</u>	<u>12-30-04 0910</u>	<u>[Signature]</u>	<u>12-30-04 0900</u>

SPECIAL INSTRUCTIONS: IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate)
Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Matrix *:
 S - Soil
 SE - Sediment
 SO - Solid
 SL - Sludge
 W - Water
 O - Oil
 A - Air
 DS - From Solids
 DL - From Liquid
 T - Tissue
 WI - Wipe
 L - Liquid
 VC - Vegetation
 X - Other

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B03-004-5	Page 1 of 2
Collector GALE, S./SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality <input type="checkbox"/>				

Ice Chest No. <i>ERC 03/04/ERC 02405/DERR</i> <i>AFB 04/04/ERC 03/02/ERC 99/022</i>	Field Logbook No. <i>04/12/904</i> EL-1516-2 1518-2	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>	Offsite Property No. <i>A050-069/070</i>	Bill of Lading/Air Bill No. <i>SEE OSPC</i>	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	NaOH to pH >= 12 Cool 4C							
	HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	aG	G/P
		No. of Container(s)	<i>64 1</i>	<i>44 1</i>	<i>44 1</i>	<i>44 1</i>	<i>44 1</i>	<i>44 2</i>	<i>44 4</i>	<i>44 4</i>	<i>DE 2</i>	<i>N 1</i>	
		Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL	

SAMPLE ANALYSIS	Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010
-----------------	------------------	-------------------	-----------------	-------------	-------------	-----------------------------	-------------------	-------------	---------------------------------------	----------------------

Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12 28 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X
J02645	WATER											

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS		Matrix * S=Soil SE=Sediment SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122804 1330</i>	Received By/Stored In <i>REFZA</i>	Date/Time <i>122804 1330</i>	(1) Semi-VOA - 8270A (App 1X); Semi-VOA -- 8270A (App 1X Add-On) (1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol)		
Relinquished By/Removed From <i>REFZA</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>SJGALE</i>	Date/Time <i>122904 1000</i>			
Relinquished By/Removed From <i>SJGALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>FED EX</i>	Date/Time <i>12-30-04 0910</i>	Received By/Stored In <i>V. A. ...</i>	Date/Time <i>12-30-04 0910</i>			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			

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

15000000

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

Date: 12-30-04

Client: *TRU-Hanford*

Purchase Order / Project # / SOW# / Release #: *B03-004*

LI Batch #: *0412L523*

Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0201

7908 7416 1290

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped Carrier: *fed Ex* Airbill# *7908 7416 1267*
2. Custody seals on coolers or shipping container intact, signed and dated? Yes No No Seals Comments
3. Outside of coolers or shipping containers are free from damage? Yes No
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? Yes No
5. Samples received cooled or ambient? Temp *3.5* °C *5-2* Cooler # *ERC-03-104*
13/10 *5-8* *03-102*
12/8 *99-022*
5-3 *04:04*
DERR
6. Custody seals on sample containers intact, signed and dated? Yes No No Seals
7. coc signed and dated? Yes No
8. Sample containers are intact? Yes No
9. All samples on coc received? All samples received on coc? Yes No
10. All sample label information matches coc? Yes No
11. Samples properly preserved? Yes No *#001 Y TPH not preserved*
12. Samples received within hold times? Short holds taken to wet lab? Yes No *PH*
13. VOA, TOC, TOX free of headspace? Yes No *TOC* N/A *Head space*
14. QC stickers placed on bottles designated by client? Yes No N/A
15. Shipment meets LVL Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) Yes No
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) Yes No No Discrepancies



Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643	001	W	05LVJ104	12/28/04	N/A	01/04/05
J02643	001 MS	W	05LVJ104	12/28/04	N/A	01/04/05
J02643	001 MSD	W	05LVJ104	12/28/04	N/A	01/04/05
J02644	002	W	05LVJ104	12/28/04	N/A	01/04/05

LAB QC:

TBLKSQ	MB1	W	05LVJ104	N/A	N/A	01/04/05
TBLKSQ	MB1 BS	W	05LVJ104	N/A	N/A	01/04/05



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.



Case Narrative

Client: TNU HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2939/B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-2004

GRO

Two (2) water samples were collected on 12-28-2004.

The samples and their associated QC samples were analyzed according to Lionville Laboratory SOPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 01-04-2005. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
2. Samples were analyzed within required holding time.
3. The method blank was below the reporting limit for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recovery was within acceptance criteria.
6. The matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
9. 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.


Jain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/4/05
Date

son\group\data\gro\tnu-hanford\0412-523.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.

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B03-004-5		Page 2 of 2																																								
Collector GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround																																							
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality		45 Days																																									
Ice Chest No. <i>ERC 03104/ERC 02405/DARK/AF304014/ERC 03102/ERC 99022</i>		Field Logbook No. <i>4A122504</i> EL-454621519-2		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>																																									
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVLI)</i>		Offsite Property No. <i>A050-069/070</i>																																															
<p>HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.</p>		<table border="1"> <thead> <tr> <th>Preservation</th> <th>Cool 4C</th> <th>HCl to pH <2 Cool 4C</th> <th>HCl to pH <2 Cool 4C</th> <th>HCl to pH <2 Cool 4C</th> <th>HNO3 to pH <2</th> <th>Cool 4C</th> <th>H2SO4 to pH <2 Cool 4C</th> <th>Cool 4C</th> <th>HCl or H2SO4 to pH <2 Cool 4C</th> <th>HCl or H2SO4 to pH <2 Cool 4C</th> </tr> </thead> <tbody> <tr> <td>Type of Container</td> <td>aGs*</td> <td>G</td> <td>aG</td> <td>aGs*</td> <td>G/P</td> <td>P</td> <td>G/P</td> <td>aG</td> <td>aGs*</td> <td>aGs*</td> </tr> <tr> <td>No. of Container(s)</td> <td><i>LN 3</i></td> <td><i>W 2</i></td> <td><i>Y 2</i></td> <td><i>HA 2</i></td> <td><i>24 1</i></td> <td><i>01 1</i></td> <td><i>0 1</i></td> <td><i>W 2</i></td> <td><i>A-C 3</i></td> <td><i>0 1</i></td> </tr> <tr> <td>Volume</td> <td>40mL</td> <td>1000mL</td> <td>1000mL</td> <td>40mL</td> <td>500mL</td> <td>500mL</td> <td>500mL</td> <td>1000mL</td> <td>40mL</td> <td>250mL</td> </tr> </tbody> </table>		Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*	No. of Container(s)	<i>LN 3</i>	<i>W 2</i>	<i>Y 2</i>	<i>HA 2</i>	<i>24 1</i>	<i>01 1</i>	<i>0 1</i>	<i>W 2</i>	<i>A-C 3</i>	<i>0 1</i>	Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL		
Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool 4C	HCl or H2SO4 to pH <2 Cool 4C																																							
Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*																																							
No. of Container(s)	<i>LN 3</i>	<i>W 2</i>	<i>Y 2</i>	<i>HA 2</i>	<i>24 1</i>	<i>01 1</i>	<i>0 1</i>	<i>W 2</i>	<i>A-C 3</i>	<i>0 1</i>																																							
Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL																																							
SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)		oil & Grease - 9070		TPH-Diesel Range - WTPH-D		TPH-Gasoline Range - WTPH-G		See item (1) in Special Instructions <i>24 122104</i>		Conductivity - 9050		Ammonia - 350.3		PAHs - 8310		See item (2) in Special Instructions <i>24 122104</i>		TOC - 9060																													
Sample No.	Matrix *	Sample Date	Sample Time																																														
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
J02644	WATER	<i>12-28-04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																												
J02645	WATER	<i>12-23-04</i>	<i>0720</i>																																														
CHAIN OF POSSESSION																																																	
Relinquished By/Removed From											Sign/Print Names																																						
SJOALE <i>APL</i> 122804 1330											REF 2A 122804 1330																																						
REF 2A 122904 1000											SJOALE <i>APL</i> 122904 1000																																						
SJOALE <i>APL</i> 122904 1000											FED EX																																						
122804 0910											12-30-04 0910																																						
LABORATORY SECTION											SPECIAL INSTRUCTIONS																																						
Received By											24 <i>APL</i> 122104 34 <i>APL</i> 122104 ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Silicon, Thallium, Tin); Mercury - 7470 - (CV) VOA - 8260A (App 1X); VOA - 8260A (App 1X Add-On) (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran);																																						
Title											Matrix *																																						
Date/Time											S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WJ=Wipe L=Liquid V=Vegetation X=Other																																						
FINAL SAMPLE DISPOSITION											Disposal Method																																						
Disposed By											Date/Time																																						

Collector: GALE, SJ/SINGLTON K. Company Contact: Jack Donnelly Telephone No.: 372-9565 Project Coordinator: KISSNER, JI Price Code: 7N Data Turnaround: 45 Days
 Project Designation: ERDF - Full List Leachate Analysis Sampling Location: ERDF - 200 West SAF No.: B03-004 Air Quality:

Ice Chest No. ERC 03104/ERC 02405/DERR Field Logbook No. AP 122904 COA: RRDFZ 2560 Method of Shipment: Federal Express
AP04014/ERC03102/ERC99022 EL-1142 1518-2
 Shipped To: 170722904 Offsite Property No.: A050-069/070 Bill of Lading/Air Bill No.: SEE OSPC
EBERLINE SERVICES (Formerly TMA) / LVL1

POSSIBLE SAMPLE HAZARDS/REMARKS

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram. e

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml. <i>LL M.M.</i>	60mL	125mL	1000ml.	1000ml.	100mL	250mL	1000mL	1000ml.

SAMPLE ANALYSIS

Nitrosamines - 8070	See item 17 in Special Instructions.	Carbon-14	See item 12 in Special Instructions.	Gross Alpha: Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
	<i>345 122904</i>		<i>APD 122904</i>					

Sample No.	Matrix *	Sample Date	Sample Time								
J02643	WATER	12 25 04	1015	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	104530	X	X	X	X	X	X	X	X
J02645	WATER		AP 122609								

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS <i>AP 1221 04</i> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate) Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155) Matrix * S= Soil SE= Sediment SO= Solid SL= Sludge W= Water O= Oil A= Air DS= Drum Solids DL= Drum Liquid T= Tissue WL= Waste L= Liquid V= Vegetation X= Other
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
<i>S. GALE</i>	<i>122904 1330</i>	<i>REF 2A</i>	<i>122804 1330</i>	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
<i>REF 2A</i>	<i>122904 1000</i>	<i>S. GALE</i>	<i>122904 1000</i>	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
<i>S. GALE</i>	<i>122904 1000</i>	<i>FED EX</i>		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
<i>F. J. O'P</i>	<i>123004 0910</i>	<i>J. P. [Signature]</i>	<i>123004 0910</i>	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5		Page 1 of 2		
Collector GALE, S/J/SINGI.TON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround	
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality <input type="checkbox"/>		45 Days	

Ice Chest No. <i>ERC 03/04/ERC02405/DEAR/AFB 04/04/ERC03/02/ERC99/022</i>		Field Logbook No. <i>01/12/04 EL-1518-2</i>		COA <i>RERDF2 ZSGO</i>		Method of Shipment Federal Express			
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>				Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE 057C</i>			

POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	NaOH to pH >= 12 Cool 4C						
	Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P	
	No. of Container(s)	<i>60 1</i>	<i>HH 1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>4</i>	<i>4</i>	<i>DE 2</i>	<i>1</i>
	Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL	

SAMPLE ANALYSIS				Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9040	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010
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Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	12 28 04	1015	X	X	X	X	X	X	X	X	X	X
J02644	WATER	12 28 04	1030	X	X	X	X	X	X	X	X	X	X
J02645	WATER												

CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				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 N=Other
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		
<i>SJGALE</i>		<i>122804 1330</i>		<i>REF 2A</i>		<i>122804 1330</i>		
<i>REF 2A</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>		
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>				
<i>FED EX</i>		<i>123004 0910</i>		<i>REF 2A</i>		<i>123004 0910</i>		

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

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TML - Homford*

Date: *12-30-04*

Purchase Order / Project# /
 SAF# / SOW# / Release #: *303-004*

LvLI Batch #: *0412L523*

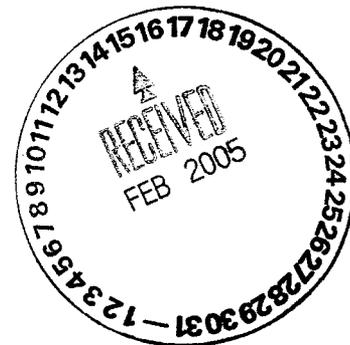
Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0201

7908 7416 1290

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|---|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# <i>7908 7416 1267</i>
<i>L L 1278</i>
<i>7914 3232 4999</i>
<i>L 5013</i> | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3.5</i>
<i>13/10</i>
<i>12/8</i>
<i>5-3</i> | °C <i>5-2</i>
<i>5-8</i> | Cooler # <i>03-102</i>
<i>02-405</i>
<i>99-022</i>
<i>04-014</i>
<i>DEER</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <i>#001 Y TPH not Busserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | <i>PH.</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <i>TOC</i> | <input type="checkbox"/> N/A <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | | <input checked="" type="checkbox"/> N/A |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | <input type="checkbox"/> No Discrepancies |



Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643						
SILVER, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
SILVER, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
ALUMINUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
ALUMINUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
ARSENIC, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
ARSENIC, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
BARIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
BARIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
BERYLLIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
BERYLLIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
CALCIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
CALCIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
CADMIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
CADMIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
COBALT, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
COBALT, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
CHROMIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
CHROMIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
COPPER, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
COPPER, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
IRON, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
IRON, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
MERCURY, TOTAL	001	W	05C0001	12/28/04	01/06/05	01/07/05
MERCURY, TOTAL	001 REP	W	05C0001	12/28/04	01/06/05	01/07/05
MERCURY, TOTAL	001 MS	W	05C0001	12/28/04	01/06/05	01/07/05
POTASSIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
POTASSIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
MAGNESIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
MAGNESIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
MANGANESE, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
MANGANESE, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05
SODIUM, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/07/05
SODIUM, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/07/05
NICKEL, TOTAL	001	W	05L0010	12/28/04	01/06/05	01/06/05
NICKEL, TOTAL	001 REP	W	05L0010	12/28/04	01/06/05	01/06/05

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
IRON, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
IRON, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
MERCURY, TOTAL	002	W	05C0001	12/28/04	01/06/05	01/07/05
POTASSIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
POTASSIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
MAGNESIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
MAGNESIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
MANGANESE, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
MANGANESE, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
SODIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/07/05
SODIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/07/05
NICKEL, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
NICKEL, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
LEAD, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
LEAD, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
ANTIMONY, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
ANTIMONY, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
SELENIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
SELENIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
SILICON, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
SILICON, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
TIN, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
TIN, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
THALLIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
THALLIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
VANADIUM, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
VANADIUM, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05
ZINC, TOTAL	002	W	05L0010	12/28/04	01/06/05	01/06/05
ZINC, TOTAL	002 MS	W	05L0010	12/28/04	01/06/05	01/06/05

LAB QC:

SILVER LABORATORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05
SILVER, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05
ALUMINUM LABORTORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05
ALUMINUM, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05
ARSENIC LABORATORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TIN, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05
THALLIUM LABORATORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05
THALLIUM, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05
VANADIUM LABORATORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05
VANADIUM, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05
ZINC LABORATORY	LC1 BS	W	05L0010	N/A	01/06/05	01/06/05
ZINC, TOTAL	MB1	W	05L0010	N/A	01/06/05	01/06/05



Analytical Report

Client: TNU-HANFORD B03-004
LVL#: 0412L523
SDG/SAF#: H2939/B03-004

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-04

METALS CASE NARRATIVE

1. This narrative covers the analyses of 2 water samples.
2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. Please refer to the Sample Receipt Check List for sample discrepancies in LVL's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. The preparation/method blank for 1 analyte was outside method criteria. {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
 - a). The MB result for Zinc was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and all samples read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

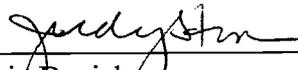
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of _____ pages.



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

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
J02644	Potassium	2,500	111.6

12. The duplicate analyses for 6 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


f Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/31/08
Date

gmb/m12-523

METALS METHOD GLOSSARY

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

Lot#: ~~0105~~ 04126522

Leaching Procedure: ^{1/27/05} 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	<input checked="" type="checkbox"/> 6010B	200.7			99
Antimony	<input checked="" type="checkbox"/> 6010B 7041 ⁵	200.7	204.2		99
Arsenic	<input checked="" type="checkbox"/> 6010B 7060A ⁵	200.7	206.2	3113B	99
Barium	<input checked="" type="checkbox"/> 6010B	200.7			99
Beryllium	<input checked="" type="checkbox"/> 6010B	200.7			99
Bismuth	<input type="checkbox"/> 6010B ¹	200.7 ¹		1620	99
Boron	<input type="checkbox"/> 6010B	200.7			99
Cadmium	<input checked="" type="checkbox"/> 6010B 7131A ⁵	200.7	213.2		99
Calcium	<input checked="" type="checkbox"/> 6010B	200.7			99
Chromium	<input checked="" type="checkbox"/> 6010B 7191 ⁵	200.7	218.2		SS17
Cobalt	<input checked="" type="checkbox"/> 6010B	200.7			99
Copper	<input checked="" type="checkbox"/> 6010B 7211 ⁵	200.7	220.2		99
Iron	<input checked="" type="checkbox"/> 6010B	200.7			99
Lead	<input checked="" type="checkbox"/> 6010B 7421 ⁵	200.7	239.2	3113B	99
Lithium	<input type="checkbox"/> 6010B 7430 ⁴	200.7		1620	99
Magnesium	<input checked="" type="checkbox"/> 6010B	200.7			99
Manganese	<input checked="" type="checkbox"/> 6010B	200.7			99
Mercury	<input checked="" type="checkbox"/> 7470A ³ 7471A ³	245.1 ² 245.5 ²			99
Molybdenum	<input type="checkbox"/> 6010B	200.7			99
Nickel	<input checked="" type="checkbox"/> 6010B	200.7			99
Potassium	<input checked="" type="checkbox"/> 6010B 7610 ⁴	200.7	258.1 ⁴		99
Rare Earths	<input type="checkbox"/> 6010B ¹	200.7 ¹		1620	99
Selenium	<input checked="" type="checkbox"/> 6010B 7740 ⁵	200.7	270.2	3113B	99
Silicon	<input checked="" type="checkbox"/> 6010B ¹	200.7		1620	99
Silica	<input type="checkbox"/> 6010B	200.7		1620	99
Silver	<input checked="" type="checkbox"/> 6010B 7761 ⁵	200.7	272.2		99
Sodium	<input checked="" type="checkbox"/> 6010B 7770 ⁴	200.7	273.1 ⁴		99
Strontium	<input type="checkbox"/> 6010B	200.7			99
Thallium	<input checked="" type="checkbox"/> 6010B 7841 ⁵	200.7	279.2 200.9		99
Tin	<input checked="" type="checkbox"/> 6010B	200.7			99
Titanium	<input type="checkbox"/> 6010B	200.7			99
Uranium	<input type="checkbox"/> 6010B ¹	200.7 ¹		1620	99
Vanadium	<input checked="" type="checkbox"/> 6010B	200.7			99
Zinc	<input checked="" type="checkbox"/> 6010B	200.7			99
Zirconium	<input type="checkbox"/> 6010B ¹	200.7 ¹		1620	99

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Flame AA.
4. Graphite Furnace AA.

L-WJ-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L523

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-001	J02643	Silver, Total	1.0	u UG/L	1.0	1.0
		Aluminum, Total	32.2	UG/L	31.3	1.0
		Arsenic, Total	8.4	UG/L	2.6	1.0
		Barium, Total	109	UG/L	0.40	1.0
		Beryllium, Total	0.10	u UG/L	0.10	1.0
		Calcium, Total	244000	UG/L	27.9	1.0
		Cadmium, Total	0.30	u UG/L	0.30	1.0
		Cobalt, Total	1.7	UG/L	0.70	1.0
		Chromium, Total	32.6	UG/L	0.80	1.0
		Copper, Total	10.3	UG/L	1.4	1.0
		Iron, Total	27.9	u UG/L	27.9	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	28100	UG/L	18.9	1.0
		Magnesium, Total	78300	UG/L	6.9	1.0
		Manganese, Total	0.30	u UG/L	0.30	1.0
		Sodium, Total	253000	UG/L	30.6	6.0
		Nickel, Total	12.6	UG/L	1.2	1.0
		Lead, Total	2.2	u UG/L	2.2	1.0
		Antimony, Total	2.8	u UG/L	2.8	1.0
		Selenium, Total	6.6	UG/L	3.7	1.0
		Silicon, Total	21300	UG/L	14.0	1.0
		Tin, Total	2.8	u UG/L	2.8	1.0
		Thallium, Total	6.3	UG/L	4.8	1.0
		Vanadium, Total	20.0	UG/L	0.70	1.0
		Zinc, Total	7.6	UG/L	1.3	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L523

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
-002	J02644	Silver, Total	1.0	u UG/L	1.0	1.0
		Aluminum, Total	44.7	UG/L	31.3	1.0
		Arsenic, Total	9.0	UG/L	2.6	1.0
		Barium, Total	109	UG/L	0.40	1.0
		Beryllium, Total	0.10	u UG/L	0.10	1.0
		Calcium, Total	246000	UG/L	27.9	1.0
		Cadmium, Total	0.30	u UG/L	0.30	1.0
		Cobalt, Total	1.6	UG/L	0.70	1.0
		Chromium, Total	34.8	UG/L	0.80	1.0
		Copper, Total	9.3	UG/L	1.4	1.0
		Iron, Total	27.9	u UG/L	27.9	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	27200	UG/L	18.9	1.0
		Magnesium, Total	78300	UG/L	6.9	1.0
		Manganese, Total	0.30	u UG/L	0.30	1.0
		Sodium, Total	254000	UG/L	30.6	6.0
		Nickel, Total	14.9	UG/L	1.2	1.0
		Lead, Total	2.2	u UG/L	2.2	1.0
		Antimony, Total	2.8	u UG/L	2.8	1.0
		Selenium, Total	6.7	UG/L	3.7	1.0
		Silicon, Total	21600	UG/L	14.0	1.0
		Tin, Total	2.8	u UG/L	2.8	1.0
		Thallium, Total	4.8	u UG/L	4.8	1.0
		Vanadium, Total	19.6	UG/L	0.70	1.0
		Zinc, Total	4.9	UG/L	1.3	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/21/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L523

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	05L0010-MB1	Silver, Total	1.0	u UG/L	1.0	1.0
		Aluminum, Total	31.3	u UG/L	31.3	1.0
		Arsenic, Total	2.6	u UG/L	2.6	1.0
		Barium, Total	2.2	UG/L	0.40	1.0
		Beryllium, Total	0.10	u UG/L	0.10	1.0
		Calcium, Total	44.9	UG/L	27.9	1.0
		Cadmium, Total	0.30	u UG/L	0.30	1.0
		Cobalt, Total	0.70	u UG/L	0.70	1.0
		Chromium, Total	0.80	u UG/L	0.80	1.0
		Copper, Total	1.4	u UG/L	1.4	1.0
		Iron, Total	27.9	u UG/L	27.9	1.0
		Potassium, Total	816	UG/L	18.9	1.0
		Magnesium, Total	27.7	UG/L	6.9	1.0
		Manganese, Total	0.30	u UG/L	0.30	1.0
		Sodium, Total	73.1	UG/L	5.1	1.0
		Nickel, Total	1.2	u UG/L	1.2	1.0
		Lead, Total	2.2	u UG/L	2.2	1.0
		Antimony, Total	2.8	u UG/L	2.8	1.0
		Selenium, Total	3.7	u UG/L	3.7	1.0
		Silicon, Total	14.0	u UG/L	14.0	1.0
		Tin, Total	2.8	u UG/L	2.8	1.0
		Thallium, Total	4.8	u UG/L	4.8	1.0
		Vanadium, Total	0.70	u UG/L	0.70	1.0
		Zinc, Total	6.4	UG/L	1.3	1.0
BLANK1	05C0001-MB1	Mercury, Total	0.10	u UG/L	0.10	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	J02643	Mercury, Total	1.0	0.10u	1.0	103.3	1.0



Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L523

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-002	J02644	Silver, Total	52.3	1.0 u	50.0	104.6	1.0
		Aluminum, Total	2220	44.7	2000	108.8	1.0
		Arsenic, Total	2100	9.0	2000	104.4	1.0
		Barium, Total	2180	109	2000	103.6	1.0
		Beryllium, Total	50.2	0.10u	50.0	100.4	1.0
		Calcium, Total	267000	246000	25000	81.7*	1.0
		Cadmium, Total	48.4	0.30u	50.0	96.8	1.0
		Cobalt, Total	497	1.6	500	99.2	1.0
		Chromium, Total	231	34.8	200	97.9	1.0
		Copper, Total	277	9.3	250	107.0	1.0
		Iron, Total	1030	27.9 u	1000	103.3	1.0
		Potassium, Total	58900	27200	25000	126.8	1.0
		Magnesium, Total	103000	78300	25000	98.4	1.0
		Manganese, Total	501	0.30u	500	100.3	1.0
		Sodium, Total	274000	254000	25000	82.0*	6.0
		Nickel, Total	503	14.9	500	97.7	1.0
		Lead, Total	500	2.2 u	500	99.9	1.0
		Antimony, Total	509	2.8 u	500	101.8	1.0
		Selenium, Total	2130	6.7	2000	106.3	1.0
		Silicon, Total	22500	21600	1000	99.8*	1.0
		Tin, Total	996	2.8 u	1000	99.6	1.0
		Thallium, Total	2090	4.8 u	2000	104.5	1.0
		Vanadium, Total	509	19.6	500	97.8	1.0
		Zinc, Total	521	4.9	500	103.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-001REP	J02643	Silver, Total	1.0 u	1.0 u	NC	1.0
		Aluminum, Total	32.2	58.3	57.7	1.0
		Arsenic, Total	8.4	8.0	4.9	1.0
		Barium, Total	109	112	2.4	1.0
		Beryllium, Total	0.10u	0.10u	NC	1.0
		Calcium, Total	244000	249000	2.2	1.0
		Cadmium, Total	0.30u	0.30u	NC	1.0
		Cobalt, Total	1.7	1.7	0.00	1.0
		Chromium, Total	32.6	33.5	2.7	1.0
		Copper, Total	10.3	13.1	23.9	1.0
		Iron, Total	27.9 u	37.1	NC ^{26.0}	1.0
		Mercury, Total	0.10u	0.10u	NC	1.0
		Potassium, Total	28100	28600	1.6	1.0
		Magnesium, Total	78300	80500	2.7	1.0
		Manganese, Total	0.30u	0.30u	NC	1.0
		Sodium, Total	253000	251000	0.80	6.0
		Nickel, Total	12.6	13.6	7.6	1.0
		Lead, Total	2.2 u	2.2 u	NC	1.0
		Antimony, Total	2.8 u	2.8 u	NC	1.0
		Selenium, Total	6.6	5.3	21.8	1.0
		Silicon, Total	21300	21900	2.9	1.0
		Tin, Total	2.8 u	2.8 u	NC	1.0
		Thallium, Total	6.3	8.3	27.4	1.0
		Vanadium, Total	20.0	20.4	2.0	1.0
		Zinc, Total	7.6	10.1	28.2	1.0

Handwritten: 1/27/05

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/21/05

CLIENT: TNUHANFORD B03-004 H2939

LVL LOT #: 0412L523

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

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
=====	=====	=====	=====	=====	=====	=====
LCS1	05L0010-LC1	Silver, LCS	516	500	UG/L	103.2
		Aluminum, LCS	5340	5000	UG/L	106.7
		Arsenic, LCS	10100	10000	UG/L	100.9
		Barium, LCS	5190	5000	UG/L	103.9
		Beryllium, LCS	254	250	UG/L	101.5
		Calcium, LCS	25400	25000	UG/L	101.5
		Cadmium, LCS	252	250	UG/L	100.6
		Cobalt, LCS	2550	2500	UG/L	102.0
		Chromium, LCS	508	500	UG/L	101.5
		Copper, LCS	1300	1250	UG/L	103.9
		Iron, LCS	5160	5000	UG/L	103.2
		Potassium, LCS	26600	25000	UG/L	106.3
		Magnesium, LCS	25500	25000	UG/L	101.9
		Manganese, LCS	771	750	UG/L	102.8
		Sodium, LCS	25700	25000	UG/L	102.7
		Nickel, LCS	2050	2000	UG/L	102.6
		Lead, LCS	2540	2500	UG/L	101.5
		Antimony, LCS	3110	3000	UG/L	103.6
		Selenium, LCS	10400	10000	UG/L	103.8
		Silicon, LCS	5530	5000	UG/L	110.7
		Tin, LCS	5130	5000	UG/L	102.6
		Thallium, LCS	10400	10000	UG/L	103.8
		Vanadium, LCS	2470	2500	UG/L	98.9
		Zinc, LCS	1040	1000	UG/L	103.7
LCS1	05C0001-LC1	Mercury, LCS	5.3	5.0	UG/L	106.4

0412L523

Custody Transfer Record/Lab Work Request



FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

A-C D E F G H I J K L M N O P Q R S T U V W X Y Z AA BB CC DD EE FF

Client: TNU HANFORD SAFETY 1303-004
 Est. Final Proj. Sampling Date: _____
 Project #: 11343-006-001-9999-00
 Project Contact/Phone #: _____
 Lionville Laboratory Project Manager: OW
 QC: Spec Del: Std TAT: 30 Days

Refrigerator #	1	4	4	4	1	1	4	4	4	4	4	4	4	4	4	4	4
#/Type Container	Liquid	G	G	G	G	G	G	P	P	G	G	G	P	P	G		
Volume	Liquid	20	1000	1000	1000	40	250	1000	500	1000	1000	1000	40	500	500	1000	
Preservatives		HCL					H2SO4		HNO3	HNO3	HCL	HCL	HCL		H2SO4		

Date Rec'd: 12/30/04 Date Due: 1/29/05

ANALYSES REQUESTED

ORGANIC				INORG			
VOA	BNA	Pest/POB	CHLORO Herb	TAL Metal	CN	Oil	TPH

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only															
		MS	MSD				0024N	0625N	0608H	0186MX	08015	08000	FOCT	OPCB	METALS	ICNTO	IOGGK	ODRO	OGRO	ISPCD	INH3N	08310
001	102643			W	12/28/04	1015	3	2	4	2	3	1	4	1	1	2	2	2	1	1	2	
002	44			L	1030		3	2	4	2	3	1	4	2	1	2	2	2	1	1	2	
003	45			L	0720		3															

Special Instructions:

RUN MATRIX QC
 SEE SRC regarding sample preservation.

DATE/REVISIONS:

- METALS (D) = As, Pb, Se, Si, TL, Sn, Hg, Al, Ag, Ba, Be, Co, Cd, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Sb, V, Zn
-
-
-
-
-

Relinquished by	Received by	Date	Time
<u>Fed Ee</u>	<u>V. King</u>	<u>12/30/04</u>	<u>0910</u>

Relinquished by	Received by	Date	Time

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B03-004-5		Page 2 of 2				
Collector GALE, S./SINGLTON K.		Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround			
Project Designation ERDF - Full List Leachate Analysis		Sampling Location ERDF - 200 West		SAF No. B03-004		Air Quality		45 Days					
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/AF304014/ERC 03102/ERC 99022</i>		Field Logbook No. <i>4A12204 EL 451621519-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>		Offsite Property No. <i>A050-069/070</i>		Bill of Lading/Air Bill No. <i>SEE OSPC</i>									
POSSIBLE SAMPLE HAZARDS/REMARKS													
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.		Preservation	Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HCl to pH <2 Cool 4C	HNO3 to pH <2	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Cool	HCl or H2SO4 to pH <2 Cool	
		Type of Container	aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*	
		No. of Container(s)	<i>LN 3</i>	<i>WT 2</i>	<i>YZ 2</i>	<i>MA 2</i>	<i>14 1</i>	<i>CC 1</i>	<i>DA 1</i>	<i>WV 2</i>	<i>A-C 3</i>	<i>0 1</i>	
		Volume	40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL	
SAMPLE ANALYSIS		Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 11 in Special Instructions <i>4A 12204</i>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 12 in Special Instructions <i>4A 12204</i>	TOC - 9060		
Sample No.	Matrix *	Sample Date	Sample Time										
J02643	WATER	<i>12.25.04</i>	<i>1015</i>	X	X	X	X	X	X	X	X		
J02644	WATER	<i>12.28.04</i>	<i>1030</i>	X	X	X	X	X	X	X	X		
J02645	WATER	<i>12.23.04</i>	<i>0720</i>							X			
CHAIN OF POSSESSION													
Relinquished By/Removed From			Date/Time			Received By/Stored In			Date/Time			SPECIAL INSTRUCTIONS	
<i>SJGALE</i>			<i>122904 1330</i>			<i>REF 2A</i>			<i>122804 1330</i>			<p>2A ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on); Arsenic, Lead, Selenium, Silicon, Thallium, Tin; Mercury - 7470 - (CV)</p> <p>3A VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) [1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran;</p> <p>Matrix *</p> <p>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</p>	
<i>REF 2A</i>			<i>122904 1000</i>			<i>SJGALE</i>			<i>122904 1000</i>				
<i>SJGALE</i>			<i>122904 1000</i>			<i>FED EX</i>							
<i>FED EX</i>			<i>12-30-04 0910</i>			<i>REF 2A</i>			<i>12-30-04 0910</i>				
LABORATORY SECTION	Received By		Title		Date/Time								
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time								

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 2 of 2
Collector GALE, SJ/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JII		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	Field Logbook No. <i>MS 122904</i> EL-1518-2	SAF No. B03-004	Air Quality <input type="checkbox"/>		45 Days
Ice Chest No. <i>ERC 03104/ERC 02405/DERR</i> <i>AF004014/ERC03102/ERC99022</i>	Offsite Property No. <i>A050-069/070</i>	COA <i>PERDEF 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE O5PC</i>	
Shipped To <i>122904</i> <i>EDERLINE SERVICES (Formerly TMA) / LVL1</i>						

HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.

Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2
Type of Container	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	2	1	1	1	2	1	1	4	1
Volume	1000ml. <i>4 MUM</i>	60mL <i>4</i>	125ml.	1000ml. <i>5</i>	1000ml.	100mL	250mL	1000mL	1000ml.

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Nitrosamines - 8070	See item 11 in Special Instructions. <i>MS 122904</i>	Carbon-14	See item 12 in Special Instructions. <i>MS 122904</i>	Gross Alpha; Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
J02643	WATER	<i>12-25-04</i>	<i>1015</i>	X		X	X	X	X	X	X	X
J02644	WATER	<i>12-28-04</i>	<i>104530</i>	X		X	X	X	X	X	X	X
J02645	WATER		<i>MS 122809</i>			X	X	X	X	X	X	X

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Sign/Print Names	Received By/Stored In	Date/Time
<i>S. GALE</i>	<i>122804 1330</i>	<i>REF 2A</i>	<i>REF 2A</i>	<i>122804 1330</i>
<i>REF 2A</i>	<i>122904 1000</i>	<i>S. GALE</i>	<i>S. GALE</i>	<i>122904 1000</i>
<i>S. GALE</i>	<i>122904 1000</i>	<i>FED EX</i>	<i>FED EX</i>	
<i>F. J. O'NEILL</i>	<i>123004 0910</i>	<i>REF 2A</i>	<i>REF 2A</i>	<i>123004 0910</i>

SPECIAL INSTRUCTIONS

MS 122904
 4X IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate);
 5X Gamma Spec - Add-on (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155);

- Matrix *
- S=Soil
 - SE= Sediment
 - SO=Solid
 - SL=Sludge
 - W=Water
 - U=Ull
 - A=Air
 - DS=From Solids
 - DL=From Liquid
 - T=Trace
 - WI=Wipe
 - L=Liquid
 - V=Vegetation
 - X=Other

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

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							B03-004-5		Page 1 of 3			
Collector GALE, S./SINGLTON K.			Company Contact Jack Donnelly			Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround			
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West			SAF No. B03-004		Air Quality <input type="checkbox"/>		45 Days					
Ice Chest No. <i>ERC 03/04/ERC02405/DERR/AFB 04/04/ERC03/02/ERC99022</i>			Field Logbook No. <i>04/22/04 EL-5162 1518-2</i>		COA <i>RERDF2 2560</i>		Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE OSPC</i>						
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>			Offsite Property No. <i>A050-069/070</i>												
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation	Cool 4C	None	ZnAc+NaOH to pH >9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH >= 12 Cool 4C	
				Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	aG	G/P
				No. of Container(s)	<i>6¹</i>	<i>4¹</i>	<i>1¹</i>	<i>1¹</i>	<i>1¹</i>	<i>1²</i>	<i>1⁴</i>	<i>1⁴</i>	<i>1²</i>	<i>1¹</i>	
				Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9030	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010		
Sample No.	Matrix *	Sample Date	Sample Time												
J02643	WATER	<i>12 28 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X		
J02644	WATER	<i>12 28 04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X		
J02645	WATER														
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>122804 1330</i>		Received By/Stored In <i>REF 2A</i>		Date/Time <i>122804 1330</i>		(1) Semi-VOA - 8270A (App 1X); Semi-VOA -- 8270A (App 1X Add-On) (1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol)				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			
Relinquished By/Removed From <i>REF 2A</i>		Date/Time <i>122904 1000</i>		Received By/Stored In <i>SJGALE</i>		Date/Time <i>122904 1000</i>									
Relinquished By/Removed From <i>SJGALE</i>		Date/Time <i>122904 1000</i>		Received By/Stored In <i>FED EX</i>		Date/Time									
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>12-30-04 0910</i>		Received By/Stored In <i>V. H. ...</i>		Date/Time <i>12-30-04 0910</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION	Received By			Title			Date/Time								
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time								

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TPH - Homford*

Date: *12-30-04*

Purchase Order / Project # /
SAF# / SOW# / Release #: *B03-004*

LvLI Batch #: *0412L523*

Sample Custodian: *[Signature]*

7914 3232 4966 FORM 0201

7908 7416 1290

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | | |
|---|--|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267
L L 1278
7914 3232 4999
L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>3-5
13/10
12/8
5-3</i> | °C <i>5-2
5-8</i> | Cooler # | <i>03-102
02-405
99-022
04-014
DEPR</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 Y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH.</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>TOC</i> | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |



Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J02643						
TOTAL CYANIDE	001	W	05LC001	12/28/04	01/05/05	01/05/05
TOTAL CYANIDE	001 REP	W	05LC001	12/28/04	01/05/05	01/05/05
AMMONIA	001	W	05LAM001	12/28/04	01/10/05	01/10/05
TOTAL ORGANIC CARBON	001	W	05LTC002	12/28/04	01/14/05	01/14/05
TOTAL ORGANIC CARBON	001 REP	W	05LTC002	12/28/04	01/14/05	01/14/05
TOTAL ORGANIC CARBON	001 MS	W	05LTC002	12/28/04	01/14/05	01/14/05
OIL & GREASE BY GRAV	001	W	05LOG001	12/28/04	01/04/05	01/05/05
OIL AND GREASE BY GR	001 REP	W	05LOG001	12/28/04	01/04/05	01/05/05
PH	001	W	04LPH112	12/28/04	12/30/04	12/30/04
PH	001 REP	W	04LPH112	12/28/04	12/30/04	12/30/04
SULFIDE	001	W	04LSD077	12/28/04	12/31/04	12/31/04
SULFIDE	001 REP	W	04LSD077	12/28/04	12/31/04	12/31/04
SPECIFIC CONDUCTANCE	001	W	04LSP037	12/28/04	12/31/04	12/31/04
SPECIFIC CONDUCTANCE	001 REP	W	04LSP037	12/28/04	12/31/04	12/31/04
TOTAL DISSOLVED SOLI	001	W	05LSS002	12/28/04	01/05/05	01/05/05
TOTAL SUSPENDE SOLI	001	W	04LSS249	12/28/04	12/31/04	12/31/04

J02644

TOTAL CYANIDE	002	W	05LC001	12/28/04	01/05/05	01/05/05
TOTAL CYANIDE	002 MS	W	05LC001	12/28/04	01/05/05	01/05/05
AMMONIA	002	W	05LAM001	12/28/04	01/10/05	01/10/05
AMMONIA	002 REP	W	05LAM001	12/28/04	01/10/05	01/10/05
AMMONIA	002 MS	W	05LAM001	12/28/04	01/10/05	01/10/05
TOTAL ORGANIC CARBON	002	W	05LTC002	12/28/04	01/14/05	01/14/05
OIL & GREASE BY GRAV	002	W	05LOG001	12/28/04	01/04/05	01/05/05
OIL AND GREASE BY GR	002 MS	W	05LOG001	12/28/04	01/04/05	01/05/05
PH	002	W	04LPH112	12/28/04	12/30/04	12/30/04
SULFIDE	002	W	04LSD077	12/28/04	12/31/04	12/31/04
SULFIDE	002 MS	W	04LSD077	12/28/04	12/31/04	12/31/04
SPECIFIC CONDUCTANCE	002	W	04LSP037	12/28/04	12/31/04	12/31/04
TOTAL DISSOLVED SOLI	002	W	05LSS002	12/28/04	01/05/05	01/05/05
TOTAL DISSOLVED SOLI	002 REP	W	05LSS002	12/28/04	01/05/05	01/05/05
TOTAL SUSPENDE SOLI	002	W	04LSS249	12/28/04	12/31/04	12/31/04

LAB QC:

TOTAL CYANIDE	LCS L	W	05LC001	N/A	01/05/05	01/05/05
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Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD B03-004 H2939

DATE RECEIVED: 12/30/04

LVL LOT # :0412L523

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL CYANIDE	LCS L	W	05LC001	N/A	01/05/05	01/05/05
TOTAL CYANIDE	MB1	W	05LC001	N/A	01/05/05	01/05/05
AMMONIA	MB1	W	05LAM001	N/A	01/10/05	01/10/05
AMMONIA	MB1 BS	W	05LAM001	N/A	01/10/05	01/10/05
AMMONIA	MB1 BSD	W	05LAM001	N/A	01/10/05	01/10/05
TOTAL ORGANIC CARBON	MB1	W	05LTC002	N/A	01/14/05	01/14/05
TOTAL ORGANIC CARBON	MB1 BS	W	05LTC002	N/A	01/14/05	01/14/05
OIL & GREASE BY GRAV	MB1	W	05LOG001	N/A	01/04/05	01/05/05
OIL AND GREASE BY GR	MB1 BS	W	05LOG001	N/A	01/04/05	01/05/05
OIL AND GREASE BY GR	MB1 BSD	W	05LOG001	N/A	01/04/05	01/05/05
SULFIDE	MB1	W	04LSD077	N/A	12/31/04	12/31/04
SULFIDE	MB1 BS	W	04LSD077	N/A	12/31/04	12/31/04
SULFIDE	MB1 BSD	W	04LSD077	N/A	12/31/04	12/31/04
SPECIFIC CONDUCTANCE	MB1	W	04LSP037	N/A	12/31/04	12/31/04
SPECIFIC CONDUCTANCE	MB1 BS	W	04LSP037	N/A	12/31/04	12/31/04
TOTAL DISSOLVED SOLI	MB1	W	05LSS002	N/A	01/05/05	01/05/05
TOTAL DISSOLVED SOLI	MB1 BS	W	05LSS002	N/A	01/05/05	01/05/05
TOTAL DISSOLVED SOLI	MB1 BSD	W	05LSS002	N/A	01/05/05	01/05/05
TOTAL SUSPENDED SOLI	MB1	W	04LSS249	N/A	12/31/04	12/31/04
TOTAL SUSPENDED SOLI	MB1 BS	W	04LSS249	N/A	12/31/04	12/31/04
TOTAL SUSPENDED SOLI	MB1 BSD	W	04LSS249	N/A	12/31/04	12/31/04



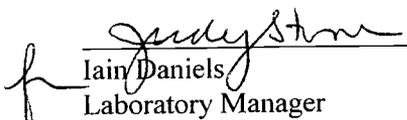
Analytical Report

Client: TNU-HANFORD B03-004 H2939
LVL#: 0412L523

W.O.#: 11343-606-001-9999-00
Date Received: 12-30-04

INORGANIC NARRATIVE

1. This narrative covers the analyses of 2 water samples.
2. The samples were prepared and analyzed in accordance with the methods checked the attached glossary.
3. Sample holding times as required by the method and/or contract were met with the exception of pH and Total Dissolved Solids (TDS) (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 LVL's sample acceptance policy with the exception of pH and Total Organic Carbon (TOC) 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. The duplicate LCS for Ammonia, Sulfide, TDS and Total Suspended Solids (TSS) were within the 20% Relative Percent Difference (RPD) control limit.
7. The matrix spike recoveries for TOC, Total Cyanide, Ammonia, Oil and Grease and Sulfide were within the 75-125% control limits.
8. The replicate analyses for Total Cyanide, Oil and Grease, pH, Sulfide, Specific Conductance, Ammonia and TDS were within the 20% RPD control limit however replicate analysis for TOC was outside the control limit that may be attributed to sample inhomogeneity. Replicate analysis for TSS was inadvertently omitted.
9. 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

1/31/05
Date

njp\i12-523

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 17 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
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	
Chlorine, 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-1 (b)
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)
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			
Total ✓ Dissolved ✓ Suspended ___ Solids	160 ✓.1	1312 ✓.2	___ .3
Total Organic Halides	450.1	___ 9020B	
Turbidity	180.1		
Volatile Solids:			
___ Total ___ Dissolved ___ Suspended	160.4		
Other:		Method:	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
 - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
 - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
 - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
 - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
 - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
 - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J02643	Cyanide, Total	5.00	u UG/L	5.00	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		Total Organic Carbon	4.1	MG/L	0.50	1.0
		Oil & Grease Gravimetri	1.1	u MG/L	1.1	1.0
		pH	7.5	PH UNIT	0.01	1.0
		Sulfide	1.0	u MG/L	1.0	1.0
		Specific Conductance	3480	US/CM	1.0	1.0
		Total Dissolved Solids	2490	MG/L	10.0	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0
-002	J02644	Cyanide, Total	5.00	u UG/L	5.00	1.0
		Ammonia, as N	0.10	u MG/L	0.10	1.0
		Total Organic Carbon	10.2	MG/L	0.50	1.0
		Oil & Grease Gravimetri	2.2	MG/L	1.0	1.0
		pH	7.6	PH UNIT	0.01	1.0
		Sulfide	1.0	u MG/L	1.0	1.0
		Specific Conductance	3520	US/CM	1.0	1.0
		Total Dissolved Solids	2070	MG/L	10.0	1.0
		Total Suspended Solids	5.00	u MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK1	05LC001-MB1	Cyanide, Total	5.00 u	UG/L	5.00	1.0
BLANK10	05LAM001-MB1	Ammonia, as N	0.10 u	MG/L	0.10	1.0
BLANK10	05LTC002-MB1	Total Organic Carbon	0.50 u	MG/L	0.50	1.0
BLANK10	05LOG001-MB1	Oil & Grease Gravimetri	1.0 u	MG/L	1.0	1.0
BLANK10	04LSD077-MB1	Sulfide	1.0 u	MG/L	1.0	1.0
BLANK10	04LSP037-MB1	Specific Conductance	1.0 u	US/CM	1.0	1.0
BLANK10	05LSS002-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	04LSS249-MB1	Total Suspended Solids	5.00 u	MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	J02643	Total Organic Carbon	10.1	4.1	5.0	119.9	1.0
-002	J02644	Cyanide, Total	66.6	5.00u	64.1	103.9	1.0
		Ammonia, as N	2.0	0.10u	2.0	97.5	1.0
		Oil & Grease Gravimetr	61.3	2.2	63.2	93.6	1.0
		Sulfide	11.7	0.30	12.2	92.9	1.0
BLANK10	05LAM001-MB1	Ammonia, as N	2.0	0.10u	2.0	99.5	1.0
		Ammonia, as N MSD	1.9	0.10u	2.0	97.0	1.0
BLANK10	05LTC002-MB1	Total Organic Carbon	5.1	0.50u	5.0	102.6	1.0
BLANK10	05LOG001-MB1	Oil & Grease Gravimetr	66.1	1.0 u	66.4	99.5	1.0
		Oil & Grease - Grav M	66.4	1.0 u	63.2	105.1	1.0
BLANK10	04LSD077-MB1	Sulfide	12.0	1.0 u	12.2	97.8	1.0
		Sulfide MSD	11.7	1.0 u	12.2	95.4	1.0
BLANK10	04LSP037-MB1	Specific Conductance	722	1.0 u	718	100.6	1.0
BLANK10	05LSS002-MB1	Total Dissolved Solids	97.0	5.00u	100	97.0	1.0
		Total Dissolved Solids	98.0	5.00u	100	98.0	1.0
BLANK10	04LSS249-MB1	Total Suspended Solids	100	5.00u	100	100.1	1.0
		Total Suspended Solids	99.6	5.00u	100	99.6	1.0



Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	SPIKE#1 SPIKE#2		%DIFF
			%RECOV	%RECOV	
BLANK10	05LAM001-MB1	Ammonia, as N	99.5	97.0	2.5
BLANK10	05LOG001-MB1	Oil & Grease Grav	99.5	105.1	5.4 <i>NA r/p 1-27-05 different spk levels</i>
BLANK10	04LSD077-MB1	Sulfide	97.8	95.4	2.5
BLANK10	05LSS002-MB1	Total Dissolved Solids	97.0	98.0	1.0
BLANK10	04LSS249-MB1	Total Suspended Solids	100.1	99.6	0.50

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE RPD		
-001REP	J02643	Cyanide, Total	5.00u	6.10u	NC	1.0
		Total Organic Carbon	4.1	6.3	40.9	1.0
		Oil & Grease Gravimetri	1.1 u	1.0 u	NC	1.0
		pH	7.5	7.6	0.3	1.0
		Sulfide	1.0 u	1.0 u	NC	1.0
		Specific Conductance	3480	3480	0.089	1.0
-002REP	J02644	Ammonia, as N	0.10u	0.10u	NC	1.0
		Total Dissolved Solids	2070	2030	1.6	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/24/05

CLIENT: TNUHANFORD B03-004 H2939
WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L523

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	05LC001-LCS1	Cyanide, Total LCS	19.5	20.0	UG/L	97.4
LCSS2	05LC001-LCS2	Cyanide, Total LCS	97.7	100	UG/L	97.7

Bechtel Hanford Inc.				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					B03-004-5		Page 2 of 2				
Collector GALE, SJ/SINGLTON K.				Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days					
Project Designation ERDF - Full List Leachate Analysis				Sampling Location ERDF - 200 West			SAF No. B03-004		Air Quality []		45 Days				
Ice Chest No. <u>ERC 03104/ERC 02405/DERR/AF504014/ERC 03102/ERC 99022</u>				Field Logbook No. <u>SA122504 EL454621518-2</u>		COA <u>RERDF2 2560</u>		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA) <u>(LVL1)</u>				Offsite Property No. <u>A050-069/070</u>			Bill of Lading/Air Bill No. <u>SEE OSPC</u>								
POSSIBLE SAMPLE HAZARDS/REMARKS HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation		Cool 4C	HCl to pH < 2 Cool 4C	HCl to pH < 2 Cool 4C	HCl to pH < 2 Cool 4C	HNO3 to pH < 2	Cool 4C	H2SO4 to pH < 2 Cool 4C	Cool 4C	HCl or H2SO4 to pH < 2 Cool 4C	HCl or H2SO4 to pH < 2 Cool 4C
				Type of Container		aGs*	G	aG	aGs*	G/P	P	G/P	aG	aGs*	aGs*
				No. of Container(s)		<u>LN 3</u>	<u>WT 2</u>	<u>YZ 2</u>	<u>AB 2</u>	<u>CD 1</u>	<u>CC 1</u>	<u>AD 1</u>	<u>WT 2</u>	<u>A-C 3</u>	<u>0 1</u>
				Volume		40mL	1000mL	1000mL	40mL	500mL	500mL	500mL	1000mL	40mL	250mL
SAMPLE ANALYSIS				Alcohols, Glycols, & Ketones - 8015 (1-Butanol, Methanol)	oil & Grease - 9070	TPH-Diesel Range - WTPH-D	TPH-Gasoline Range - WTPH-G	See item 11 in Special Instructions <u>ADD 122104</u>	Conductivity - 9050	Ammonia - 350.3	PAHs - 8310	See item 12 in Special Instructions <u>ADD 122104</u>	TOC - 9060		
Sample No.	Matrix *	Sample Date	Sample Time												
J02643	WATER	<u>12.25.04</u>	<u>1015</u>	X	X	X	X	X	X	X	X	X	X		
J02644	WATER	<u>12.28.04</u>	<u>1030</u>	X	X	X	X	X	X	X	X	X	X		
J02645	WATER	<u>12.23.04</u>	<u>0720</u>									X			
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <u>SJ GALE</u>		Date/Time <u>122804 1330</u>		Received By/Stored In <u>REF 2A</u>		Date/Time <u>122804 1330</u>		<u>ADD 122104</u> 2A ICP Metals - 6010A (TAL); ICP Metals - 6010A (Add-on) (Arsenic, Lead, Selenium, Silicon, Thallium, Tin); Mercury - 7470 - (CV) 3A VOA - 8260A (App IX); VOA - 8260A (App IX Add-On) (1,1,2-Trichloro-1,2,2-trifluoroethane, 1,3-Butadiene, 2-Chloroethyl vinyl ether, Allyl alcohol, cis-1,2-Dichloroethylene, Crotonaldehyde, 1,1-Dichloropropanol, Diethyl ether, Ethyl acetate, Isopropylbenzene, Tetrahydrofuran);				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			
Relinquished By/Removed From <u>REF 2A</u>		Date/Time <u>122904 1000</u>		Received By/Stored In <u>SJ GALE</u>		Date/Time <u>122904 1000</u>									
Relinquished By/Removed From <u>SJ GALE</u>		Date/Time <u>122904 1000</u>		Received By/Stored In <u>FED EX</u>		Date/Time									
Relinquished By/Removed From <u>REF 2A</u>		Date/Time <u>123004 0910</u>		Received By/Stored In <u>REF 2A</u>		Date/Time <u>123004 0910</u>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

00000014

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B03-004-5	Page 1 of 2
Collector GALE, SJ/SINGLTON K.	Company Contact Jack Donnelly	Telephone No. 372-9565	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround
Project Designation ERDF - Full List Leachate Analysis	Sampling Location ERDF - 200 West	SAF No. B03-004	Air Quality <input type="checkbox"/>		45 Days	
Ice Chest No. <i>ERC 03104/ERC 02405/DERR/AF004014/ERC 03102/ERC 99022</i>	Field Logbook No. <i>MS 122804</i> IL-1142 <i>1518-2</i>	COA <i>PERDFZ 2560</i>	Method of Shipment Federal Express		Bill of Lading/Air Bill No. <i>SEE O5PC</i>	
Shipped To <i>MS 122904</i> EBERLINE SERVICES (Formerly TMA) / <i>LV61</i>		Offsite Property No. <i>A050-069/070</i>				

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C	Cool 4C	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HCl to pH <2	None	HNO3 to pH <2	
	HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.	Type of Container	uG	P	G/P	G/P	G/P	G/P	G/P	G/P	G/P
		No. of Container(s)	2	1	1	1	2	1	1	4	1
		Volume	1000ml. <i>MM</i>	60mL <i>4</i>	125mL.	1000ml. <i>5</i>	1000ml.	100mL.	250mL.	1000mL.	1000ml.

SAMPLE ANALYSIS				Nitrosamines - 8070	See item 11 in Special Instructions. <i>MS 122804</i>	Carbon-14	See item 12 in Special Instructions. <i>MS 122804</i>	Gross Alpha, Gross Beta	Total Uranium	Technetium-99	Iodine-129	Total Radium
Sample No.	Matrix *	Sample Date	Sample Time									
J02643	WATER	<i>12 25 04</i>	<i>1015</i>	X		X	X	X	X	X	X	X
J02644	WATER	<i>12 28 04</i>	<i>1045 30</i>	X		X	X	X	X	X	X	X
J02645	WATER		<i>MS 122804</i>									

CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS <i>MS 122804</i> 4x5 IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate} 5x2 Gamma Spec - Add-on {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}	Matrix * S= Soil SL= Solution SO= Solid SI= Sludge W= Water O= Oil A= Air DS= Drum Solids DL= Drum Liquid T= Gas WI= Waste L= Liquid V= Vegetation N= Other
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122804 1330</i>	Received By/Stored In <i>REFZA</i>	Date/Time <i>122804 1330</i>				
Relinquished By/Removed From <i>R. J. F. 2A</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>S. GALE</i>	Date/Time <i>122904 1000</i>				
Relinquished By/Removed From <i>S. GALE</i>	Date/Time <i>122904 1000</i>	Received By/Stored In <i>FED EX</i>	Date/Time				
Relinquished By/Removed From <i>F. J. O. P.</i>	Date/Time <i>123004 0910</i>	Received By/Stored In <i>F. J. O. P.</i>	Date/Time <i>123004 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				

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

Bechtel Hanford Inc.			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B03-004-5		Page 1 of 3			
Collector GALE, SJ/SINGLTON K.			Company Contact Jack Donnelly		Telephone No. 372-9565		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days			
Project Designation ERDF - Full List Leachate Analysis			Sampling Location ERDF - 200 West			SAF No. B03-004			Air Quality <input type="checkbox"/>					
Ice Chest No. <i>ERC 03/04/ERC02405/DERR</i> <i>AFB 04/04/ERL03/02/ERC99/022</i>			Field Logbook No. <i>015/22904</i> <i>EL-1516-2</i>		COA <i>PERDFZ 2560</i>		Method of Shipment Federal Express							
Shipped To EBERLINE SERVICES (Formerly TMA) <i>(LVL1)</i>			Offsite Property No. <i>A050-069/070</i>			Bill of Lading/Air Bill No. <i>SEE OSPC</i>								
POSSIBLE SAMPLE HAZARDS/REMARKS														
HISTORICAL DATA INDICATES THAT SAMPLES ARE LESS THAN 2000 pCi/gram.				Preservation	Cool 4C	None	ZnAc+NaOH to pH > 9 Cool	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	NaOH to pH > 12 Cool 4C	
				Type of Container	aG	P	G/P	G/P	G/P	aG	aG	aG	aG	G/P
				No. of Container(s)	<i>GV 1</i>	<i>HA 1</i>	<i>NY 1</i>	<i>S 1</i>	<i>K 1</i>	<i>JK 2</i>	<i>PT 4</i>	<i>DM 4</i>	<i>DE 2</i>	<i>N 1</i>
				Volume	500mL	100mL	500mL	500mL	500mL	1000mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Carbonyls - 8315	pH (Water) - 9040	Sulfides - 9050	TDS - 160.1	TSS - 160.2	Chloro-Herbicides - EPA8151	Pesticides - 8081	PCBs - 8082	See item (1) in Special Instructions.	Total Cyanide - 9010	
Sample No.	Matrix *	Sample Date	Sample Time											
J02643	WATER	<i>12 28 04</i>	<i>1015</i>	X	X	X	X	X	X	X	X	X	X	
J02644	WATER	<i>12 28 04</i>	<i>1030</i>	X	X	X	X	X	X	X	X	X	X	
J02645	WATER													
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time		(1) Semi-VOA - 8270A (App IX); Semi-VOA -- 8270A (App IX Add-On) [1,2-Diphenylhydrazine, 1,4-Dinitrobenzene, 1-Acetyl-2-thiourea, 2,5-Diaminotoluene, 2-Cyclohexyl-4,6-dinitrophenol]					S=Soil SE=Sediment SO=Solid Sl=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other	
<i>SJGALE</i>		<i>122804 1330</i>		<i>REF ZA</i>		<i>122804 1330</i>								
<i>REF ZA</i>		<i>122904 1000</i>		<i>SJGALE</i>		<i>122904 1000</i>								
<i>SJGALE</i>		<i>122904 1000</i>		<i>FED EX</i>										
<i>FED EX</i>		<i>12-30-04 0910</i>		<i>V. H. ...</i>		<i>12-30-04 0910</i>								
LABORATORY SECTION	Received By			Title			Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time							

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TMU - Hanford*

Date: *12-30-04*

Purchase Order / Project# /
SAF# / SOW# / Release #: *B03-004*

LvLI Batch #: *0412L523*

Sample Custodian: *[Signature]*
7914 3232 4966 FORM 0201

NOTE: EXPLAIN ALL DISCREPANCIES

7908 7416 1290

- | | | | | |
|---|--|--|--|---|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>fed Ex</i> | Airbill# | <i>7908 7416 1267
L L 1278
7914 3232 4997
L L 5013</i> | Comments |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | <i>ERC-03-104</i> |
| 5. Samples received cooled or ambient? | Temp <i>35
1310
1218
5-3</i> | °C <i>5-2
5-8</i> | Cooler # | <i>03-102
02-405
99-022
04:014
DEPP</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>#001 Y TPH not preserved</i> | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>PH</i> | |
| 13. <u>VOA</u> , TOC, TOX free of headspace? | <input checked="" type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <i>TOC</i> | <i>Head space</i> |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Discrepancies | |