H1215

0055065

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1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1215 was composed of eleven solid samples designated under SAF No. B01-030 with a Project Designation of: 100 F Area – Full Protocol.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-Fax on February 9, 2001.

2.0 ANALYSIS NOTES

2.1 Carbon-14 Analyses

The C-14 samples were realiquoted due to a failed LCS. The data from the realiquoted samples is reported herein. No problems were encountered during the course of the reanalyses.

2.2 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.3 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analyses

No problems were encountered during the course of the analyses.

2.5 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 Mannion
Melissa C. Mannion
Program Manager

2/13/01
Date

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

SAMPLE SUMMARY

SDG 7612
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B118D1	1607-F6 Shallow Zone	SOLID		R101101-01	B00-030	B00-030-02	01/16/01 08:50
B118D2	1607-F6 Shallow Zone	SOLID		R101101-02	B00-030	B00-030-02	01/16/01 09:20
B118D3	1607-F6 Shallow Zone	SOLID		R101101-03	B00-030	B00-030-02	01/16/01 10:15
B118D4	1607-F6 Shallow Zone	SOLID		R101101-04	B00-030	B00-030-02	01/16/01 10:12
B118D5	1607-F6 Shallow Zone	SOLID		R101101-05	B00-030	B00-030-02	01/16/01 08:50
B118D7	1607-F6 Shallow Zone	SOLID		R101101-06	B00-030	B00-030-02	01/16/01 08:45
B118D8	1607-F6 Shallow Zone	SOLID		R101101-07	B00-030	B00-030-04	01/16/01 08:55
B118D9	1607-F6 Shallow Zone	SOLID		R101101-08	B00-030	B00-030-04	01/16/01 09:17
B118F0	1607-F6 Shallow Zone	SOLID		R101101-09	B00-030	B00-030-04	01/16/01 09:28
B118F1	1607-F6 Shallow Zone	SOLID		R101101-10	B00-030	B00-030-04	01/16/01 09:35
B118F2	1607-F6 Shallow Zone	SOLID		R101101-11	B00-030	B00-030-04	01/16/01 08:55
Method Blank		SOLID		R101101-13	B00-030		
Method Blank		SOLID		R101101-16	B00-030		
Method Blank		SOLID		R101101-20	B00-030		
Lab Control Sample		SOLID		R101101-12	B00-030		
Lab Control Sample		SOLID		R101101-15	B00-030		
Lab Control Sample		SOLID		R101101-18	B00-030		
Lab Control Sample		SOLID		R101101-19	B00-030		
Duplicate (R101101-04)	1607-F6 Shallow Zone	SOLID		R101101-14	B00-030		01/16/01 10:12
Duplicate (R101101-04)	1607-F6 Shallow Zone	SOLID		R101101-21	B00-030		01/16/01 10:12
Duplicate (R101101-08)	1607-F6 Shallow Zone	SOLID		R101101-17	B00-030		01/16/01 09:17

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

QC SUMMARY

SDG 7612
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7612	B00-030-02	B118D1	SOLID	93.8			01/18/01	2	R101101-01	7612-001
		B118D2	SOLID	94.0			01/18/01	2	R101101-02	7612-002
		B118D3	SOLID	93.4			01/18/01	2	R101101-03	7612-003
		B118D4	SOLID	91.5			01/18/01	2	R101101-04	7612-004
		B118D5	SOLID	93.8			01/18/01	2	R101101-05	7612-005
		B118D7	SOLID	100.0			01/18/01	2	R101101-06	7612-006
	B00-030-04	B118D8	SOLID	94.5			01/18/01	2	R101101-07	7612-007
		B118D9	SOLID	94.8			01/18/01	2	R101101-08	7612-008
		B118F0	SOLID	94.0			01/18/01	2	R101101-09	7612-009
		B118F1	SOLID	94.4			01/18/01	2	R101101-10	7612-010
		B118F2	SOLID	94.2			01/18/01	2	R101101-11	7612-011
		Method Blank	SOLID						R101101-13	7612-013
		Method Blank	SOLID						R101101-16	7612-016
		Method Blank	SOLID						R101101-20	7612-020
		Lab Control Sample	SOLID						R101101-12	7612-012
		Lab Control Sample	SOLID						R101101-15	7612-015
		Lab Control Sample	SOLID						R101101-18	7612-018
		Lab Control Sample	SOLID						R101101-19	7612-019
		Duplicate (R101101-04)	SOLID	91.5			01/18/01	2	R101101-14	7612-014
		Duplicate (R101101-04)	SOLID	91.5			01/18/01	2	R101101-21	7612-021
		Duplicate (R101101-08)	SOLID	94.8			01/18/01	2	R101101-17	7612-017

Lab id TMANC
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SAMPLE DELIVERY GROUP H1215

PREP BATCH SUMMARY

SDG 7612
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
U	SOLID	Uranium, Isotopic in Soil	6963-078	5.0	11			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	6963-078	10.0	11			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6963-078	15.0	11			1	1	1/1		
Liquid Scintillation Counting												
C	SOLID	Carbon 14 in Soil	6963-078	10.0	11			1	2	1/1		
NI_L	SOLID	Nickel 63 in Soil	6963-078	10.0	11			2	2	2/2		

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

Lab id TMANC
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SAMPLE DELIVERY GROUP H1215

WORK SUMMARY

SDG 7612
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B118D1			R101101-01	7612-001	C	A1	01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-001	GAM		01/26/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-001	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-001	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-001	U		02/01/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D2			R101101-02	7612-002	C	A1	01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-002	GAM		01/27/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-002	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-002	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-002	U		02/01/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D3			R101101-03	7612-003	C	A1	01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-003	GAM		01/27/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-003	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-003	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-003	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D4			R101101-04	7612-004	C	A1	01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-004	GAM		01/27/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-004	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-004	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-004	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D5			R101101-05	7612-005	C	A1	01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-005	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-005	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-005	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-005	U		02/06/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D7			R101101-06	7612-006	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-006	GAM		01/27/01	02/09/01	MCM	Gamma Scan
B00-030-02	B00-030		01/18/01	7612-006	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
				7612-006	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-006	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil

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TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

SDG 7612
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B118D8			R101101-07	7612-007	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-007	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-04	B00-030		01/18/01	7612-007	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
				7612-007	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-007	U		02/06/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118D9			R101101-08	7612-008	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-008	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-04	B00-030		01/18/01	7612-008	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
				7612-008	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-008	U		02/02/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118F0			R101101-09	7612-009	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-009	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-04	B00-030		01/18/01	7612-009	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
				7612-009	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-009	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118F1			R101101-10	7612-010	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-010	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-04	B00-030		01/18/01	7612-010	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
				7612-010	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-010	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil
B118F2			R101101-11	7612-011	C	A1	02/01/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01	7612-011	GAM		01/29/01	02/09/01	MCM	Gamma Scan
B00-030-04	B00-030		01/18/01	7612-011	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
				7612-011	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-011	U		01/30/01	02/09/01	MCM	Uranium, Isotopic in Soil
Method Blank			R101101-13	7612-013	GAM		01/29/01	02/09/01	MCM	Gamma Scan
		SOLID		7612-013	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
	B00-030			7612-013	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-013	U		02/02/01	02/09/01	MCM	Uranium, Isotopic in Soil
Method Blank			R101101-16	7612-016	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
		SOLID								
	B00-030									

Lab id TMANC
Protocol Hanford
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Form DVD-CWS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

SDG 7612
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Method Blank			R101101-20	7612-020	C		01/31/01	02/09/01	MCM	Carbon 14 in Soil
		SOLID								
	B00-030									
Lab Control Sample			R101101-12	7612-012	GAM		01/29/01	02/09/01	MCM	Gamma Scan
		SOLID		7612-012	NI_L		01/31/01	02/09/01	MCM	Nickel 63 in Soil
	B00-030			7612-012	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-012	U		02/02/01	02/09/01	MCM	Uranium, Isotopic in Soil
Lab Control Sample			R101101-15	7612-015	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
		SOLID								
	B00-030									
Lab Control Sample			R101101-18	7612-018	C		02/01/01	02/09/01	MCM	Carbon 14 in Soil
		SOLID								
	B00-030									
Lab Control Sample			R101101-19	7612-019	C		02/01/01	02/09/01	MCM	Carbon 14 in Soil
		SOLID								
	B00-030									
Duplicate (R101101-04)			R101101-14	7612-014	GAM		01/29/01	02/09/01	MCM	Gamma Scan
1607-F6 Shallow Zone		SOLID	01/16/01	7612-014	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
	B00-030		01/18/01	7612-014	SR		01/26/01	02/09/01	MCM	Total Strontium in Soil
				7612-014	U		02/02/01	02/09/01	MCM	Uranium, Isotopic in Soil
Duplicate (R101101-04)			R101101-21	7612-021	C		01/31/01	02/09/01	MCM	Carbon 14 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01							
	B00-030		01/18/01							
Duplicate (R101101-08)			R101101-17	7612-017	NI_L		02/01/01	02/09/01	MCM	Nickel 63 in Soil
1607-F6 Shallow Zone		SOLID	01/16/01							
	B00-030		01/18/01							

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SAMPLE DELIVERY GROUP H1215

SDG 7612
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1215

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
C	B00-030	Carbon 14 in Soil	C14_COX_LSC	11			1	2	1	15
GAM	B00-030	Gamma Scan	GAMMA_GS	11			1	1	1	14
NI_L	B00-030	Nickel 63 in Soil	NI63_LSC	11			2	2	2	17
SR	B00-030	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	11			1	1	1	14
U	B00-030	Uranium, Isotopic in Soil	UISO_PLATE_AEA	11			1	1	1	14
TOTALS				55			6	7	6	74

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TMA/RICHMOND
SAMPLE DELIVERY GROUP H1215

R101101-13 Method Blank

METHOD BLANK

SDG	7612	Client/Case no	Hanford SDG_H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-13	Client sample id	Method Blank
Dept sample id	7612-013	Material/Matrix	SOLID
		SAF No	B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Nickel 63	13981-37-8	0.334	1.4	2.3	30	U	NI_L
Total Strontium	SR-RAD	-0.044	0.097	0.21	1.0	U	SR
Uranium 233	U-233/234	0.012	0.024	0.030	1.0	U	U
Uranium 235	15117-96-1	-0.005	0.019	0.037	1.0	U	U
Uranium 238	U-238	0.004	0.016	0.030	1.0	U	U
Potassium 40	13966-00-2	U		0.23		U	GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	U		0.010	0.10	U	GAM
Radium 226	13982-63-3	U		0.019	0.10	U	GAM
Radium 228	15262-20-1	U		0.046	0.20	U	GAM
Europium 152	14683-23-9	U		0.033	0.10	U	GAM
Europium 154	15585-10-1	U		0.043	0.10	U	GAM
Europium 155	14391-16-3	U		0.036	0.10	U	GAM
Thorium 228	14274-82-9	U		0.017		U	GAM
Thorium 232	TH-232	U		0.046		U	GAM
Uranium 235	15117-96-1	U		0.048		U	GAM
Uranium 238	U-238	U		1.4		U	GAM
Americium 241	14596-10-2	U		0.091		U	GAM

100 F Area - Full Protocol

QC-BLANK 37369

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND
SAMPLE DELIVERY GROUP H1215

R101101-16

Method Blank

METHOD BLANK

SDG	7612	Client/Case no	Hanford	SDG H1215	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R101101-16	Client sample id	Method Blank		
Dept sample id	7612-016	Material/Matrix		SOLID	
		SAF No	B00-030		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Nickel 63	13981-37-8	0.481	1.2	2.1	30	U	NI_L

100 F Area - Full Protocol

QC-BLANK 37372

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-20

Method Blank

METHOD BLANK

SDG	7612	Client/Case no	Hanford	SDG H1215	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R101101-20	Client sample id	Method Blank		
Dept sample id	7612-020	Material/Matrix		SOLID	
		SAF No	B00-030		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.034	2.5	4.3	50	U	C

100 F Area - Full Protocol

QC-BLANK 37429

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-12

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7612
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1215
Case no TRC-SBB-207925

Lab sample id R101101-12
Dept sample id 7612-012

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No B00-030

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Nickel 63	254	4.4	2.2	30		NI_L	266	11	95	84-116	80-120
Total Strontium	23.1	0.78	0.20	1.0		SR	23.0	0.92	100	83-117	80-120
Uranium 233	18.6	0.70	0.32	1.0		U	19.3	0.77	96	89-111	80-120
Uranium 235	15.1	0.61	0.030	1.0		U	15.7	0.63	96	89-111	80-120
Uranium 238	21.0	0.76	0.31	1.0		U	21.0	0.84	100	89-111	80-120
Cobalt 60	0.294	0.025	0.008	0.050		GAM	0.287	0.011	102	73-127	80-120
Cesium 137	0.302	0.021	0.013	0.10		GAM	0.286	0.011	106	73-127	80-120

100 F Area - Full Protocol

QC-LCS 37368

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-15

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Case no	TRC-SBB-207925
Lab sample id	R101101-15	Client sample id	Lab Control Sample
Dept sample id	7612-015	Material/Matrix	SOLID
		SAF No	B00-030

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Nickel 63	249	5.3	2.5	30		NI_L	266	11	94	84-116	80-120

100 F Area - Full Protocol

QC-LCS 37371

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LCS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-18

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7612
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1215
Case no TRC-SBB-207925

Lab sample id R101101-18
Dept sample id 7612-018

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No B00-030

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	11000	220	27	50		C	11200	450	98	84-116	80-120

100 F Area - Full Protocol

QC-LCS 37427

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-19

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Case no	TRC-SBB-207925
Lab sample id	R101101-19	Client sample id	Lab Control Sample
Dept sample id	7612-019	Material/Matrix	SOLID
		SAF No	B00-030

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Carbon 14	10100	200	27	50		C	11200	450	90	85-115	80-120

100 F Area - Full Protocol

QC-LCS 37428

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LCS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-14

B118D4

DUPLICATE

SDG	7612			Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion			Case no	TRC-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	R101101-14	Lab sample id	R101101-04	Client sample id	B118D4
Dept sample id	7612-014	Dept sample id	7612-004	Location/Matrix	1607-F6 Shallow Zone SOLID
		Received	01/18/01	Collected	01/16/01 10:12
% solids	91.5	% solids	91.5	Custody/SAF No	B00-030-02 B00-030

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	PROT LIMIT
Nickel 63	0.294	1.5	2.4	30	U	NI_L	-1.20	1.4	2.4	U	-		
Total Strontium	-0.012	0.071	0.13	1.0	U	SR	-0.020	0.098	0.21	U	-		
Uranium 233	0.357	0.057	0.019	1.0	J	U	0.491	0.22	0.21	J	32	81	
Uranium 235	0.027	0.019	0.019	1.0	J	U	0.033	0.066	0.25	U	20	344	
Uranium 238	0.357	0.053	0.015	1.0	J	U	0.273	0.16	0.21	J	27	81	
Potassium 40	15.7	0.87	0.31			GAM	15.7	0.67	0.20		0	34	
Cobalt 60	U		0.030	0.050	U	GAM	U		0.028	U	-		
Cesium 137	U		0.027	0.10	U	GAM	U		0.026	U	-		
Radium 226	0.479	0.057	0.054	0.10		GAM	0.509	0.064	0.055		6	41	
Radium 228	0.679	0.14	0.13	0.20		GAM	0.612	0.12	0.12		10	53	
Europium 152	U		0.068	0.10	U	GAM	U		0.069	U	-		
Europium 154	U		0.093	0.10	U	GAM	U		0.10	U	-		
Europium 155	U		0.067	0.10	U	GAM	U		0.074	U	-		
Thorium 228	0.668	0.038	0.031			GAM	0.568	0.036	0.033		16	34	
Thorium 232	0.679	0.14	0.13			GAM	0.612	0.12	0.12		10	53	
Uranium 235	U		0.098		U	GAM	U		0.12	U	-		
Uranium 238	U		3.5		U	GAM	U		3.4	U	-		
Americium 241	U		0.038		U	GAM	U		0.10	U	-		

100 F Area - Full Protocol

QC-DUP#4 37370

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-21 B118D4

DUPLICATE

SDG	7612			Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion			Case no	TRC-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	R101101-21	Lab sample id	R101101-04	Client sample id	B118D4
Dept sample id	7612-021	Dept sample id	7612-004	Location/Matrix	1607-F6 Shallow Zone SOLID
		Received	01/18/01	Collected	01/16/01 10:12
% solids	91.5	% solids	91.5	Custody/SAF No	B00-030-02 B00-030

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Carbon 14	-1.06	2.4	4.2	50	U	C	0.905	2.7	4.6	U	-	

100 F Area - Full Protocol

QC-DUP #4A1 37430

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-17 B11809

DUPLICATE

SDG	7612			Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion			Case no	TRC-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	R101101-17	Lab sample id	R101101-08	Client sample id	B11809
Dept sample id	7612-017	Dept sample id	7612-008	Location/Matrix	1607-F6 Shallow Zone SOLID
		Received	01/18/01	Collected	01/16/01 09:17
% solids	94.8	% solids	94.8	Custody/SAF No	B00-030-04 B00-030

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Nickel 63	0.151	1.3	2.3	30	U	NI_L	0.641	1.4	2.3	U	-	

100 F Area - Full Protocol

QC-DUP#8 37373

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	02/09/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-01 B118D1

DATA SHEET

SDG	7612	Client/Case no	Hanford	SDG H1215	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R101101-01	Client sample id	B118D1		
Dept sample id	7612-001	Location/Matrix	1607-F6 Shallow Zone	SOLID	
Received	01/18/01	Collected	01/16/01 08:50		
% solids	93.8	Custody/SAF No	B00-030-02	B00-030	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.613	2.7	4.5	50	U	C
Nickel 63	13981-37-8	-0.277	1.5	2.5	30	U	NI_L
Total Strontium	SR-RAD	0.066	0.11	0.22	1.0	U	SR
Uranium 233	U-233/234	0.388	0.18	0.14	1.0	J	U
Uranium 235	15117-96-1	0.192	0.13	0.16	1.0	J	U
Uranium 238	U-238	0.777	0.25	0.14	1.0	J	U
Potassium 40	13966-00-2	15.7	0.56	0.087			GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	0.014	0.007	0.007	0.10	J	GAM
Radium 226	13982-63-3	0.461	0.023	0.016	0.10		GAM
Radium 228	15262-20-1	0.722	0.045	0.037	0.20		GAM
Europium 152	14683-23-9	U		0.019	0.10	U	GAM
Europium 154	15585-10-1	U		0.027	0.10	U	GAM
Europium 155	14391-16-3	U		0.036	0.10	U	GAM
Thorium 228	14274-82-9	0.647	0.018	0.009			GAM
Thorium 232	TH-232	0.722	0.045	0.037			GAM
Uranium 235	15117-96-1	0.031	0.022	0.033		U	GAM
Uranium 238	U-238	U		0.98		U	GAM
Americium 241	14596-10-2	U		0.011		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-02 **B118D2**

DATA SHEET

SDG	7612	Client/Case no	Hanford	SDG H1215	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R101101-02	Client sample id	B118D2		
Dept sample id	7612-002	Location/Matrix	1607-F6 Shallow Zone	SOLID	
Received	01/18/01	Collected	01/16/01 09:20		
% solids	94.0	Custody/SAF No	B00-030-02	B00-030	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.588	2.6	4.4	50	U	C
Nickel 63	13981-37-8	-0.252	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.041	0.11	0.21	1.0	U	SR
Uranium 233	U-233/234	0.495	0.21	0.14	1.0	J	U
Uranium 235	15117-96-1	0.150	0.13	0.16	1.0	U	U
Uranium 238	U-238	0.619	0.22	0.14	1.0	J	U
Potassium 40	13966-00-2	13.9	1.0	0.49			GAM
Cobalt 60	10198-40-0	U		0.050	0.050	U	GAM
Cesium 137	10045-97-3	U		0.042	0.10	U	GAM
Radium 226	13982-63-3	0.486	0.079	0.071	0.10		GAM
Radium 228	15262-20-1	0.618	0.22	0.23	0.20		GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		0.17	0.10	U	GAM
Europium 155	14391-16-3	U		0.084	0.10	U	GAM
Thorium 228	14274-82-9	0.596	0.047	0.047			GAM
Thorium 232	TH-232	0.618	0.22	0.23			GAM
Uranium 235	15117-96-1	U		0.14		U	GAM
Uranium 238	U-238	U		6.1		U	GAM
Americium 241	14596-10-2	U		0.056		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-03 B118D3

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-03	Client sample id	B118D3
Dept sample id	7612-003	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 10:15
% solids	93.4	Custody/SAF No	B00-030-02 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.652	2.5	4.1	50	U	C
Nickel 63	13981-37-8	0.096	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	-0.013	0.10	0.22	1.0	U	SR
Uranium 233	U-233/234	0.399	0.20	0.19	1.0	J	U
Uranium 235	15117-96-1	0.060	0.061	0.23	1.0	U	U
Uranium 238	U-238	0.449	0.20	0.19	1.0	J	U
Potassium 40	13966-00-2	13.3	1.1	0.71			GAM
Cobalt 60	10198-40-0	U		0.053	0.050	U	GAM
Cesium 137	10045-97-3	U		0.049	0.10	U	GAM
Radium 226	13982-63-3	0.462	0.082	0.081	0.10		GAM
Radium 228	15262-20-1	0.587	0.16	0.19	0.20		GAM
Europium 152	14683-23-9	U		0.11	0.10	U	GAM
Europium 154	15585-10-1	U		0.18	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	0.666	0.053	0.054			GAM
Thorium 232	TH-232	0.587	0.16	0.19			GAM
Uranium 235	15117-96-1	U		0.17		U	GAM
Uranium 238	U-238	U		5.8		U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-04 B118D4

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-04	Client sample id	B118D4
Dept sample id	7612-004	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 10:12
% solids	91.5	Custody/SAF No	B00-030-02 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.905	2.7	4.6	50	U	C
Nickel 63	13981-37-8	-1.20	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	-0.020	0.098	0.21	1.0	U	SR
Uranium 233	U-233/234	0.491	0.22	0.21	1.0	J	U
Uranium 235	15117-96-1	0.033	0.066	0.25	1.0	U	U
Uranium 238	U-238	0.273	0.16	0.21	1.0	J	U
Potassium 40	13966-00-2	15.7	0.67	0.20			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.10	U	GAM
Radium 226	13982-63-3	0.509	0.064	0.055	0.10		GAM
Radium 228	15262-20-1	0.612	0.12	0.12	0.20		GAM
Europium 152	14683-23-9	U		0.069	0.10	U	GAM
Europium 154	15585-10-1	U		0.10	0.10	U	GAM
Europium 155	14391-16-3	U		0.074	0.10	U	GAM
Thorium 228	14274-82-9	0.568	0.036	0.033			GAM
Thorium 232	TH-232	0.612	0.12	0.12			GAM
Uranium 235	15117-96-1	U		0.12		U	GAM
Uranium 238	U-238	U		3.4		U	GAM
Americium 241	14596-10-2	U		0.10		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND
SAMPLE DELIVERY GROUP H1215

R101101-05 B118D5

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-05	Client sample id	B118D5
Dept sample id	7612-005	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 08:50
% solids	93.8	Custody/SAF No	B00-030-02 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.136	2.5	4.3	50	U	C
Nickel 63	13981-37-8	-0.410	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.044	0.11	0.22	1.0	U	SR
Uranium 233	U-233/234	0.212	0.16	0.20	1.0	J	U
Uranium 235	15117-96-1	0	0.064	0.25	1.0	U	U
Uranium 238	U-238	0.451	0.21	0.20	1.0	J	U
Potassium 40	13966-00-2	13.5	0.98	0.59			GAM
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.048	0.10	U	GAM
Radium 226	13982-63-3	0.547	0.082	0.078	0.10		GAM
Radium 228	15262-20-1	0.605	0.20	0.21	0.20		GAM
Europium 152	14683-23-9	U		0.11	0.10	U	GAM
Europium 154	15585-10-1	U		0.16	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	0.628	0.048	0.051			GAM
Thorium 232	TH-232	0.605	0.20	0.21			GAM
Uranium 235	15117-96-1	U		0.15		U	GAM
Uranium 238	U-238	U		5.0		U	GAM
Americium 241	14596-10-2	U		0.15		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND
SAMPLE DELIVERY GROUP H1215

R101101-06 B118D7

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-06	Client sample id	B118D7
Dept sample id	7612-006	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 08:45
% solids	100.0	Custody/SAF No	B00-030-02 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	1.02	2.7	4.6	50	U	C
Nickel 63	13981-37-8	-0.715	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	0.010	0.11	0.22	1.0	U	SR
Uranium 233	U-233/234	0.026	0.052	0.20	1.0	U	U
Uranium 235	15117-96-1	0	0.063	0.24	1.0	U	U
Uranium 238	U-238	0.235	0.16	0.20	1.0	J	U
Potassium 40	13966-00-2	6.77	0.60	0.24			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.022	0.10	U	GAM
Radium 226	13982-63-3	0.167	0.042	0.041	0.10		GAM
Radium 228	15262-20-1	0.222	0.082	0.088	0.20		GAM
Europium 152	14683-23-9	U		0.059	0.10	U	GAM
Europium 154	15585-10-1	U		0.095	0.10	U	GAM
Europium 155	14391-16-3	U		0.087	0.10	U	GAM
Thorium 228	14274-82-9	0.151	0.032	0.041			GAM
Thorium 232	TH-232	0.222	0.082	0.088			GAM
Uranium 235	15117-96-1	U		0.10		U	GAM
Uranium 238	U-238	U		2.9		U	GAM
Americium 241	14596-10-2	U		0.22		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-07 B118D8

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-07	Client sample id	B118D8
Dept sample id	7612-007	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 08:55
% solids	94.5	Custody/SAF No	B00-030-04 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-1.80	2.6	4.5	50	U	C
Nickel 63	13981-37-8	0.197	1.6	2.6	30	U	NI_L
Total Strontium	SR-RAD	0.010	0.11	0.22	1.0	U	SR
Uranium 233	U-233/234	0.384	0.18	0.17	1.0	J	U
Uranium 235	15117-96-1	0.082	0.11	0.21	1.0	U	U
Uranium 238	U-238	0.226	0.14	0.17	1.0	J	U
Potassium 40	13966-00-2	15.0	0.60	0.23			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.023	0.10	U	GAM
Radium 226	13982-63-3	0.401	0.056	0.053	0.10		GAM
Radium 228	15262-20-1	0.580	0.13	0.13	0.20		GAM
Europium 152	14683-23-9	U		0.057	0.10	U	GAM
Europium 154	15585-10-1	U		0.088	0.10	U	GAM
Europium 155	14391-16-3	U		0.064	0.10	U	GAM
Thorium 228	14274-82-9	0.568	0.032	0.029			GAM
Thorium 232	TH-232	0.580	0.13	0.13			GAM
Uranium 235	15117-96-1	U		0.10		U	GAM
Uranium 238	U-238	U		3.0		U	GAM
Americium 241	14596-10-2	U		0.089		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-08 **B118D9**

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-08	Client sample id	B118D9
Dept sample id	7612-008	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 09:17
% solids	94.8	Custody/SAF No	B00-030-04 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0.602	2.5	4.2	50	U	C
Nickel 63	13981-37-8	0.641	1.4	2.3	30	U	NI_L
Total Strontium	SR-RAD	-0.057	0.093	0.21	1.0	U	SR
Uranium 233	U-233/234	0.339	0.073	0.044	1.0	J	U
Uranium 235	15117-96-1	0.008	0.016	0.030	1.0	U	U
Uranium 238	U-238	0.392	0.073	0.025	1.0	J	U
Potassium 40	13966-00-2	15.7	0.82	0.36			GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.10	U	GAM
Radium 226	13982-63-3	0.506	0.068	0.067	0.10		GAM
Radium 228	15262-20-1	0.676	0.16	0.16	0.20		GAM
Europium 152	14683-23-9	U		0.085	0.10	U	GAM
Europium 154	15585-10-1	U		0.12	0.10	U	GAM
Europium 155	14391-16-3	U		0.12	0.10	U	GAM
Thorium 228	14274-82-9	0.621	0.040	0.037			GAM
Thorium 232	TH-232	0.676	0.16	0.16			GAM
Uranium 235	15117-96-1	U		0.15		U	GAM
Uranium 238	U-238	U		4.0		U	GAM
Americium 241	14596-10-2	U		0.30		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-09 B118F0

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-09	Client sample id	B118F0
Dept sample id	7612-009	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 09:28
% solids	94.0	Custody/SAF No	B00-030-04 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-0.552	2.6	4.3	50	U	C
Nickel 63	13981-37-8	-0.334	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	0.021	0.093	0.19	1.0	U	SR
Uranium 233	U-233/234	0.480	0.23	0.22	1.0	J	U
Uranium 235	15117-96-1	0.068	0.068	0.26	1.0	U	U
Uranium 238	U-238	0.536	0.23	0.22	1.0	J	U
Potassium 40	13966-00-2	15.9	0.87	0.33			GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	U		0.026	0.10	U	GAM
Radium 226	13982-63-3	0.498	0.056	0.051	0.10		GAM
Radium 228	15262-20-1	0.701	0.13	0.13	0.20		GAM
Europium 152	14683-23-9	U		0.064	0.10	U	GAM
Europium 154	15585-10-1	U		0.094	0.10	U	GAM
Europium 155	14391-16-3	U		0.068	0.10	U	GAM
Thorium 228	14274-82-9	0.620	0.036	0.031			GAM
Thorium 232	TH-232	0.701	0.13	0.13			GAM
Uranium 235	15117-96-1	U		0.097		U	GAM
Uranium 238	U-238	U		3.4		U	GAM
Americium 241	14596-10-2	U		0.038		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-10 B118F1

DATA SHEET

SDG	7612	Client/Case no	Hanford SDG_H1215
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R101101-10	Client sample id	B118F1
Dept sample id	7612-010	Location/Matrix	1607-F6 Shallow Zone SOLID
Received	01/18/01	Collected	01/16/01 09:35
% solids	94.4	Custody/SAF No	B00-030-04 B00-030

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	-1.75	2.5	4.2	50	U	C
Nickel 63	13981-37-8	1.19	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	0.057	0.11	0.21	1.0	U	SR
Uranium 233	U-233/234	0.372	0.20	0.26	1.0	J	U
Uranium 235	15117-96-1	0.082	0.082	0.31	1.0	U	U
Uranium 238	U-238	0.372	0.20	0.26	1.0	J	U
Potassium 40	13966-00-2	13.9	0.95	0.40			GAM
Cobalt 60	10198-40-0	U		0.051	0.050	U	GAM
Cesium 137	10045-97-3	U		0.036	0.10	U	GAM
Radium 226	13982-63-3	0.386	0.090	0.090	0.10		GAM
Radium 228	15262-20-1	0.771	0.17	0.16	0.20		GAM
Europium 152	14683-23-9	U		0.086	0.10	U	GAM
Europium 154	15585-10-1	U		0.16	0.10	U	GAM
Europium 155	14391-16-3	U		0.076	0.10	U	GAM
Thorium 228	14274-82-9	0.539	0.044	0.043			GAM
Thorium 232	TH-232	0.771	0.17	0.16			GAM
Uranium 235	15117-96-1	U		0.13		U	GAM
Uranium 238	U-238	U		6.4		U	GAM
Americium 241	14596-10-2	U		0.051		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1215

R101101-11 B118F2

DATA SHEET

SDG	7612	Client/Case no	Hanford	SDG H1215	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R101101-11	Client sample id	B118F2		
Dept sample id	7612-011	Location/Matrix	1607-F6 Shallow Zone	SOLID	
Received	01/18/01	Collected	01/16/01 08:55		
% solids	94.2	Custody/SAF No	B00-030-04	B00-030	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Carbon 14	14762-75-5	0	0	4.3	50	U	C
Nickel 63	13981-37-8	0.149	1.3	2.2	30	U	NI_L
Total Strontium	SR-RAD	-0.068	0.089	0.20	1.0	U	SR
Uranium 233	U-233/234	0.479	0.20	0.19	1.0	J	U
Uranium 235	15117-96-1	0.092	0.12	0.23	1.0	U	U
Uranium 238	U-238	0.252	0.15	0.19	1.0	J	U
Potassium 40	13966-00-2	15.1	0.98	0.48			GAM
Cobalt 60	10198-40-0	U		0.046	0.050	U	GAM
Cesium 137	10045-97-3	U		0.043	0.10	U	GAM
Radium 226	13982-63-3	0.503	0.079	0.073	0.10		GAM
Radium 228	15262-20-1	0.692	0.21	0.21	0.20		GAM
Europium 152	14683-23-9	U		0.098	0.10	U	GAM
Europium 154	15585-10-1	U		0.15	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Thorium 228	14274-82-9	0.563	0.046	0.048			GAM
Thorium 232	TH-232	0.692	0.21	0.21			GAM
Uranium 235	15117-96-1	U		0.15		U	GAM
Uranium 238	U-238	U		5.0		U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM

100 F Area - Full Protocol

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test U Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	1: Uranium 233	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 6963-078											
B118D1	R101101-01			7612-001	0.388 J	0.192 J	0.777 J	50	28	25	19
B118D2	R101101-02			7612-002	0.495 J	U	0.619 J	80	44	24	23
B118D3	R101101-03			7612-003	0.399 J	U	0.449 J	89	60	13	15
B118D4	R101101-04			7612-004	0.491 J	U	0.273 J	180	133	12	25
B118D5	R101101-05			7612-005	0.212 J	U	0.451 J	47	42	0	14
B118D7	R101101-06			7612-006	U	U	0.235 J	11	23	0	27
B118D8	R101101-07			7612-007	0.384 J	U	0.226 J	170	132	36	54
B118D9	R101101-08			7612-008	0.339 J	U	0.392 J	86	25	2	4
B118F0	R101101-09			7612-009	0.480 J	U	0.536 J	90	58	13	14
B118F1	R101101-10			7612-010	0.372 J	U	0.372 J	100	76	22	25
B118F2	R101101-11			7612-011	0.479 J	U	0.252 J	190	138	37	52
BLK (QC ID=37369)	R101101-13			7612-013	U	U	U				
LCS (QC ID=37368)	R101101-12			7612-012	ok	ok	ok				
Duplicate (R101101-04)	R101101-14			7612-014	ok J	ok J	ok J	100	22	8	5
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
100 F Area - Full Protocol								Averages 99		16	

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test U Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6963-078	2σ prep error 5.0 %			Reference Lab Notebook 6963 pg. 078												
B118D1	R101101-01			0.16	0.500			83		157			16	01/26/01	02/01	SS-036
B118D2	R101101-02			0.16	0.500			84		157			16	01/26/01	02/01	SS-037
B118D3	R101101-03			0.23	0.500			86		105			14	01/26/01	01/30	SS-035
B118D4	R101101-04			0.25	0.500			87		105			14	01/26/01	01/30	SS-036
B118D5	R101101-05			0.25	0.500			84		102			21	01/26/01	02/06	SS-029
B118D7	R101101-06			0.24	0.500			88		105			14	01/26/01	01/30	SS-038
B118D8	R101101-07			0.21	0.500			96		102			21	01/26/01	02/06	SS-031
B118D9	R101101-08			0.044	0.500			95		729			17	01/26/01	02/02	SS-034
B118F0	R101101-09			0.26	0.500			90		122			14	01/26/01	01/30	SS-021
B118F1	R101101-10			0.31	0.500			81		117			14	01/26/01	01/30	SS-022
B118F2	R101101-11			0.23	0.500			90		121			14	01/26/01	01/30	SS-023
BLK (QC ID=37369)	R101101-13			0.037	0.500			81		729				01/26/01	02/02	SS-037
LCS (QC ID=37368)	R101101-12			0.32	0.500			96		729				01/26/01	02/02	SS-036
Duplicate (R101101-04) (QC ID=37370)	R101101-14			0.019	1.00			83		729			17	01/26/01	02/02	SS-038
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	CP-911	Uranium in Water and Dissolved Sample by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 3

AVERAGES ± 2 SD FOR 14 SAMPLES
MDA 0.19 ± 0.20
YIELD 87 ± 11

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

Test SR Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium	
Preparation batch 6963-078						
B118D1	R101101-01			7612-001	U	
B118D2	R101101-02			7612-002	U	
B118D3	R101101-03			7612-003	U	
B118D4	R101101-04			7612-004	U	
B118D5	R101101-05			7612-005	U	
B118D7	R101101-06			7612-006	U	
B118D8	R101101-07			7612-007	U	
B118D9	R101101-08			7612-008	U	
B118F0	R101101-09			7612-009	U	
B118F1	R101101-10			7612-010	U	
B118F2	R101101-11			7612-011	U	
BLK (QC ID=37369)	R101101-13			7612-013	U	
LCS (QC ID=37368)	R101101-12			7612-012	ok	
Duplicate (R101101-04)	R101101-14			7612-014	-	U

Nominal values and limits from method RDLs (pCi/g) 1.0
100 F Area - Full Protocol

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test SR Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6963-078	2σ prep error 10.0 %			Reference Lab Notebook 6963 pg. 078												
B118D1	R101101-01			0.22	1.00			98		100			10	01/25/01	01/26	GRB-217
B118D2	R101101-02			0.21	1.00			97		100			10	01/25/01	01/26	GRB-218
B118D3	R101101-03			0.22	1.00			96		100			10	01/25/01	01/26	GRB-219
B118D4	R101101-04			0.21	1.00			96		100			10	01/25/01	01/26	GRB-220
B118D5	R101101-05			0.22	1.00			99		100			10	01/25/01	01/26	GRB-221
B118D7	R101101-06			0.22	1.00			92		100			10	01/25/01	01/26	GRB-222
B118D8	R101101-07			0.22	1.00			97		100			10	01/25/01	01/26	GRB-223
B118D9	R101101-08			0.21	1.00			99		100			10	01/25/01	01/26	GRB-224
B118F0	R101101-09			0.19	1.00			98		100			10	01/25/01	01/26	GRB-222
B118F1	R101101-10			0.21	1.00			99		100			10	01/25/01	01/26	GRB-230
B118F2	R101101-11			0.20	1.00			98		100			10	01/25/01	01/26	GRB-231
BLK (QC ID=37369)	R101101-13			0.21	1.00			88		100				01/25/01	01/26	GRB-224
LCS (QC ID=37368)	R101101-12			0.20	1.00			91		100				01/25/01	01/26	GRB-232
Duplicate (R101101-04) (QC ID=37370)	R101101-14			0.13	1.00			99		200			10	01/25/01	01/26	GRB-203
Nominal values and limits from method				1.0	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-502	Strontium in Solids, rev 2
	CP-519	Strontium Planchet Demounting and Preparation for 90Y Decontamination, rev 2

AVERAGES ± 2 SD FOR 14 SAMPLES
MDA 0.20 ± 0.047
YIELD 96 ± 7

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test GAM Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60	Cesium 137
Preparation batch 6963-078						
B118D1	R101101-01			7612-001	U	0.014 J
B118D2	R101101-02			7612-002	U	U
B118D3	R101101-03			7612-003	U	U
B118D4	R101101-04			7612-004	U	U
B118D5	R101101-05			7612-005	U	U
B118D7	R101101-06			7612-006	U	U
B118D8	R101101-07			7612-007	U	U
B118D9	R101101-08			7612-008	U	U
B118F0	R101101-09			7612-009	U	U
B118F1	R101101-10			7612-010	U	U
B118F2	R101101-11			7612-011	U	U
BLK (QC ID=37369)	R101101-13			7612-013	U	U
LCS (QC ID=37368)	R101101-12			7612-012	ok	ok
Duplicate (R101101-04)	R101101-14			7612-014	- U	- U
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
100 F Area - Full Protocol						

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test GAM Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6963-078	2σ prep error 15.0 %	Reference Lab Notebook 6963 pg. 078														
B118D1	R101101-01			0.020	776					1500			10	01/22/01	01/26	MB,07,00
B118D2	R101101-02			0.12	818					105			11	01/22/01	01/27	02,01,00
B118D3	R101101-03			0.14	783					104			11	01/22/01	01/27	02,03,00
B118D4	R101101-04			0.076	746					104			11	01/22/01	01/27	02,04,00
B118D5	R101101-05			0.12	793					120			13	01/22/01	01/29	02,03,00
B118D7	R101101-06			0.065	839					104			11	01/22/01	01/27	MB,05,00
B118D8	R101101-07			0.067	805					120			13	01/22/01	01/29	02,04,00
B118D9	R101101-08			0.091	785					120			13	01/22/01	01/29	MB,05,00
B118F0	R101101-09			0.077	782					120			13	01/22/01	01/29	MB,07,00
B118F1	R101101-10			0.13	758					128			13	01/22/01	01/29	02,01,00
B118F2	R101101-11			0.10	808					125			13	01/22/01	01/29	02,03,00
BLK (QC ID=37369)	R101101-13			0.018	966					125				01/22/01	01/29	MB,05,00
LCS (QC ID=37368)	R101101-12			0.008	966					125				01/22/01	01/29	01,04,00
Duplicate (R101101-04) (QC ID=37370)	R101101-14			0.073	746					125			13	01/22/01	01/29	MB,07,00
Nominal values and limits from method				0.050	746					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	CP-060	Soil Preparation, rev 2
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 2

AVERAGES ± 2 SD FOR 14 SAMPLES
MDA 0.079 ± 0.084
YIELD ____ ± ____

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test C Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

CARBON 14 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Carbon 14	
Preparation batch 6963-078						
B118D1	R101101-01		A1	7612-001	U	
B118D2	R101101-02		A1	7612-002	U	
B118D3	R101101-03		A1	7612-003	U	
B118D4	R101101-04		A1	7612-004	U	
B118D5	R101101-05		A1	7612-005	U	
B118D7	R101101-06		A1	7612-006	U	
B118D8	R101101-07		A1	7612-007	U	
B118D9	R101101-08		A1	7612-008	U	
B118F0	R101101-09		A1	7612-009	U	
B118F1	R101101-10		A1	7612-010	U	
B118F2	R101101-11		A1	7612-011	U	
BLK (QC ID=37429)	R101101-20			7612-020	U	
LCS (QC ID=37427)	R101101-18			7612-018	ok	
LCS (QC ID=37428)	R101101-19			7612-019	ok	
Duplicate (R101101-04)	R101101-21			7612-021	-	U

Nominal values and limits from method RDLs (pCi/g) 50
100 F Area - Full Protocol

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test C Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

CARBON 14 IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6963-078	2σ prep error 10.0 %			Reference Lab Notebook 6963 pg. 078												
B118D1	R101101-01		A1	4.5	0.204			100		100			15	01/30/01	01/31	LSC-005
B118D2	R101101-02		A1	4.4	0.212			100		100			15	01/30/01	01/31	LSC-005
B118D3	R101101-03		A1	4.1	0.216			100		100			15	01/30/01	01/31	LSC-005
B118D4	R101101-04		A1	4.6	0.204			100		100			15	01/30/01	01/31	LSC-005
B118D5	R101101-05		A1	4.3	0.210			100		100			15	01/30/01	01/31	LSC-005
B118D7	R101101-06		A1	4.6	0.200			100		100			16	01/30/01	02/01	LSC-005
B118D8	R101101-07		A1	4.5	0.202			100		100			16	01/30/01	02/01	LSC-005
B118D9	R101101-08		A1	4.2	0.205			100		100			16	01/30/01	02/01	LSC-005
B118F0	R101101-09		A1	4.3	0.202			100		100			16	01/30/01	02/01	LSC-005
B118F1	R101101-10		A1	4.2	0.204			100		100			16	01/30/01	02/01	LSC-005
B118F2	R101101-11		A1	4.3	0.207			100		100			16	01/30/01	02/01	LSC-005
BLK (QC ID=37429)	R101101-20			4.3	0.200			100		100				01/30/01	01/31	LSC-005
LCS (QC ID=37427)	R101101-18			27	0.200			100		3				01/30/01	02/01	LSC-005
LCS (QC ID=37428)	R101101-19			27	0.200			100		3				01/30/01	02/01	LSC-005
Duplicate (R101101-04) (QC ID=37430)	R101101-21			4.2	0.210			100		100			15	01/30/01	01/31	LSC-005
Nominal values and limits from method				50	0.200					50			180			

PROCEDURES	REFERENCE	C14_COX_LSC
	CP-060	Soil Preparation, rev 2
	CP-251	Tritium/Carbon-14 Oxidation, rev 2

AVERAGES ± 2 SD FOR 15 SAMPLES
MDA 7.4 ± 16
YIELD 100 ± 0

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test NI L Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Nickel 63	
Preparation batch 6963-078						
B118D1	R101101-01			7612-001	U	
B118D2	R101101-02			7612-002	U	
B118D3	R101101-03			7612-003	U	
B118D4	R101101-04			7612-004	U	
B118D5	R101101-05			7612-005	U	
B118D7	R101101-06			7612-006	U	
B118D8	R101101-07			7612-007	U	
B118D9	R101101-08			7612-008	U	
B118F0	R101101-09			7612-009	U	
B118F1	R101101-10			7612-010	U	
B118F2	R101101-11			7612-011	U	
BLK (QC ID=37369)	R101101-13			7612-013	U	
BLK (QC ID=37372)	R101101-16			7612-016	U	
LCS (QC ID=37368)	R101101-12			7612-012	ok	
LCS (QC ID=37371)	R101101-15			7612-015	ok	
Duplicate (R101101-04)	R101101-14			7612-014	-	U
Duplicate (R101101-08)	R101101-17			7612-017	-	U

Nominal values and limits from method RDLs (pCi/g) 30
100 F Area - Full Protocol

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1215

Test NI_L Matrix SOLID
SDG 7612
Contact Melissa C. Mannion

METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1215

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6963-078	2σ prep error 10.0 %			Reference Lab Notebook 6963 pg. 078												
B118D1	R101101-01			2.5	0.500			87		100			15	01/30/01	01/31	LSC-006
B118D2	R101101-02			2.4	0.500			88		100			15	01/30/01	01/31	LSC-006
B118D3	R101101-03			2.4	0.500			89		100			15	01/30/01	01/31	LSC-006
B118D4	R101101-04			2.4	0.500			87		100			15	01/30/01	01/31	LSC-006
B118D5	R101101-05			2.4	0.500			87		100			15	01/30/01	01/31	LSC-006
B118D7	R101101-06			2.2	0.500			96		100			15	01/30/01	01/31	LSC-006
B118D8	R101101-07			2.6	0.500			77		100			16	01/31/01	02/01	LSC-004
B118D9	R101101-08			2.3	0.500			88		100			16	01/31/01	02/01	LSC-004
B118F0	R101101-09			2.2	0.500			90		100			16	01/31/01	02/01	LSC-004
B118F1	R101101-10			2.2	0.500			92		100			16	01/31/01	02/01	LSC-004
B118F2	R101101-11			2.2	0.500			90		100			16	01/31/01	02/01	LSC-004
BLK (QC ID=37369)	R101101-13			2.3	0.500			91		100				01/30/01	01/31	LSC-006
BLK (QC ID=37372)	R101101-16			2.1	0.500			97		100				01/31/01	02/01	LSC-004
LCS (QC ID=37368)	R101101-12			2.2	0.500			97		100				01/30/01	01/31	LSC-006
LCS (QC ID=37371)	R101101-15			2.5	0.500			98		65				01/31/01	02/01	LSC-004
Duplicate (R101101-04) (QC ID=37370)	R101101-14			2.4	0.500			87		100			16	01/30/01	02/01	LSC-006
Duplicate (R101101-08) (QC ID=37373)	R101101-17			2.3	0.500			88		100			16	01/31/01	02/01	LSC-004
Nominal values and limits from method				30	0.500			30-105		50			180			

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 2
	RP-431	Nickel-63 Purification, rev 0

AVERAGES ± 2 SD FOR 17 SAMPLES
MDA 2.3 ± 0.27
YIELD 90 ± 10

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 02/09/01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 1 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich; Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone H1215 (7612)	SAF No.: B00-030	Air Quality ☐
Ice Chest No.: 7A2	Field Logbook No.: EL-1535; COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: HMSR # 000853	Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
PCB's Previous Data indicates < 50ppm

Special Handling and/or Storage
PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	250mL	250mL	250mL	1000mL					
SAMPLE ANALYSIS	~~Isotopic Plutonium~~; Isotopic Uranium; ~~Americium-241~~ MG 1-16-01	Strontium-89,90 – Total Sr; Nickel-63; Carbon-14; ~~Technetium-99~~	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time								
B118D1	SOIL	1-16-01	0850								A1
B118D2	SOIL	1-16-01	0920								A2
B118D3	SOIL	1-16-01	1015								A3
B118D4	SOIL	1-16-01	1012								A4
B118D5	SOIL	1-16-01	0853								A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Stankovich	1-16-01 1515	R. Thoren	1-16-01 1515
R. Thoren	1-16-01 1615	Bjorsdin Ref SC 3728	1-16-01 1615
Bjorsdin Ref SC 3728	1-17-01 0800	R. Thoren	1-17-01 0800
R. Thoren	1-17-01 1000	E. Edem	1-17-01
FED. EXPRESS	01-18-01 10 AM	E. Deguzman	01-18-01 10:AM

SPECIAL INSTRUCTIONS
MG 1-16-01 RT 1.17.01
~~(1) ICP Metals - 6010A (Superfund) (Arsenic, Chromium, Lead), Mercury - 7471 - (CV)~~
(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Tie all to: B106P5

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 2 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich; Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100 F Area - Pull Protocol	Sampling Location: 1607-F6 Shallow Zone H1215 (76A)	SAF No.: B00-030	Air Quality ☐
Ice Chest No.: 1A2	Field Logbook No.: EL-1535; COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: HMSR# 000853	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous Data indicates <50ppm

Special Handling and/or Storage

PCB's

SAMPLE ANALYSIS												
Preservation	None	None	Cool 4C	Cool 4C	None	None						
Type of Container	aG	aG	aG	aG	aG	P						
No. of Container(s)	1	1	1	1	1	1						
Volume	60mL	60mL	250mL	250mL	250mL	1000mL						
	Isotopic Plutonium; Isotopic Uranium; ~~Americium-241~~ mb 1-16-01	Strontium-89,90 – Total Sr; Nickel-63; Carbon-14; ~~Technetium-99~~	PCBs - 8082	SVOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.						
Sample No.	Matrix *	Sample Date	Sample Time									
B118D7	SOIL	1-16-01	0845	✓	✓				✓			EB

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	Stankovich	1-16-01 1575	R. Thorer	1515 1-16-01
Relinquished By	R. Thorer	1615 1-16-01	Received By (stored in Ref SC 3728)	1615 1-16-01
Relinquished By	Remained in Ref SC 3728	1-17-01 0800	Received By R. Thorer	0800 1-17-01
Relinquished By	R. Thorer	1-17-01 1500	Received By FED EX	01-17-01
Relinquished By	FED. EXPRESS	01-18-01 10 Am	Received By E. Segura	01-18-01 10 Am
Relinquished By		Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

mb 1-16-01 RT 1-17-01

(1) ICP Metals - 6010A (Superfund) ~~(Arsenic, Chromium, Lead); Mercury 7471 (CV)~~

(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

Tie all to B10qS

Matrix *

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-04	Page 1 of 1

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Overburden H1215 (761R)	SAF No.: B00-030	
Ice Chest No.: 7A7	Field Logbook No.: EL-1535	COA: R607F62600	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: HMSR 000853	Bill of Lading/Air Bill No.: N/A	

POSSIBLE SAMPLE HAZARDS/REMARKS
PCB's Previous Data indicates <50ppm

Special Handling and/or Storage
PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None					
Type of Container	aG	aG	aG	aG	aG	P					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	250mL	250mL	250mL	1000mL					
SAMPLE ANALYSIS	~~Isotopic Plutonium~~; Isotopic Uranium; ~~Americium-241~~ 1-16-01	Strontium-89,90 – Total Sr; Nickel-63; Carbon-14; ~~Technetium-99~~	PCBs - 8082	~~Total Volatile Organics - 8260A (TCL)~~	See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time								
B118D8	SOIL	1-16-01	0855								A1
B118D9	SOIL	1-16-01	0917								A2
B118F0	SOIL	1-16-01	0928								A3
B118F1	SOIL	1-16-01	0935								A4
B118F2	SOIL	1-16-01	0853								A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Stankovich	1-16-01 1515	R. Thoren	1515 1-16-01
R. Thoren	1615 1/16/01	Stored in Ref 3C 3728	1615 1/16/01
Removed from Ref 3C 3728	0800 1-17-01	R. Thoren	0800 1/17-01
R. Thoren	1000 1-17-01	FEDEX	01-17-01
FED. EXPRESS	10 Am 01-18-01	E. Aragon	10 Am 01-18-01

RT 1/17

SPECIAL INSTRUCTIONS
(1) ~~ICP Metals - 6010A (Superfund) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)~~
(2) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Tie all to B106P5

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

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

BHI-EE-011 (10/99)

ThermoRetec
Richmond Laboratory

Analytical Services

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD INC. Date/Time received 01-18-01 10:AM

CoC No. B00-030-02; AND B00-030-04.

Container I.D. No. 1AZ Requested TAT (Days) 21 P.O. Received Yes [ ] No [✓]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Cooler Temperature: _____ Packing material is: Wet [ ] Dry [✓]
6. Number of samples in shipping container: 11
7. Number of containers per sample: (3 EACH) (Or see CoC _____)
8. Paperwork agrees with samples? Yes [✓] No [ ]
9. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
10. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
11. Describe any anomalies: _____
13. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
14. Received by E. Aguro Date: 01-18-01 Time: 10:Am

Customer Sample No.	cpm	mr/hr	Customer Sample No.	Cpm	mr/hr

Ion Chamber Ser. No. _____ Calibration date _____

Survey Meter Ser No. _____ Calibration date _____

MAR 2001 RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-030 H1215

DATE RECEIVED: 01/19/01 LVL LOT # :0101L797

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B118D1						
CHROMIUM, TOTAL	001	S	01L0033	01/16/01	01/30/01	02/08/01
CHROMIUM, TOTAL	001 REP	S	01L0033	01/16/01	01/30/01	02/08/01
CHROMIUM, TOTAL	001 MS	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	001	S	01C0033	01/16/01	01/25/01	01/26/01
MERCURY, TOTAL	001 REP	S	01C0033	01/16/01	01/25/01	01/26/01
MERCURY, TOTAL	001 MS	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	001	S	01L0033	01/16/01	01/30/01	02/08/01
LEAD, TOTAL	001 REP	S	01L0033	01/16/01	01/30/01	02/08/01
LEAD, TOTAL	001 MS	S	01L0033	01/16/01	01/30/01	02/08/01
B118D2						
CHROMIUM, TOTAL	002	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	002	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	002	S	01L0033	01/16/01	01/30/01	02/08/01
B118D3						
CHROMIUM, TOTAL	003	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	003	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	003	S	01L0033	01/16/01	01/30/01	02/08/01
B118D4						
CHROMIUM, TOTAL	004	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	004	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	004	S	01L0033	01/16/01	01/30/01	02/08/01
B118D5						
CHROMIUM, TOTAL	005	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	005	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	005	S	01L0033	01/16/01	01/30/01	02/08/01
B118D7						
CHROMIUM, TOTAL	006	S	01L0033	01/16/01	01/30/01	02/08/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-030 H1215

DATE RECEIVED: 01/19/01 LVL LOT # :0101L797

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	006	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	006	S	01L0033	01/16/01	01/30/01	02/08/01
B118D8						
CHROMIUM, TOTAL	007	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	007	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	007	S	01L0033	01/16/01	01/30/01	02/08/01
B118D9						
CHROMIUM, TOTAL	008	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	008	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	008	S	01L0033	01/16/01	01/30/01	02/08/01
B118F0						
CHROMIUM, TOTAL	009	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	009	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	009	S	01L0033	01/16/01	01/30/01	02/08/01
B118F1						
CHROMIUM, TOTAL	010	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	010	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	010	S	01L0033	01/16/01	01/30/01	02/08/01
B118F2						
CHROMIUM, TOTAL	011	S	01L0033	01/16/01	01/30/01	02/08/01
MERCURY, TOTAL	011	S	01C0033	01/16/01	01/25/01	01/26/01
LEAD, TOTAL	011	S	01L0033	01/16/01	01/30/01	02/08/01

LAB QC:

CHROMIUM LABORATORY	LC1 BS	S	01L0033	N/A	01/30/01	02/08/01
CHROMIUM, TOTAL	MB1	S	01L0033	N/A	01/30/01	02/08/01
MERCURY LABORATORY	LC1 BS	S	01C0033	N/A	01/25/01	01/26/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-030 H1215

DATE RECEIVED: 01/19/01 LVL LOT # :0101L797

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	MB1	S	01C0033	N/A	01/25/01	01/26/01
LEAD LABORATORY	LC1 BS	S	01L0033	N/A	01/30/01	02/08/01
LEAD, TOTAL	MB1	S	01L0033	N/A	01/30/01	02/08/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B00-030
LVL#: 0101L797
SDG/SAF#: H1215/B00-030

W.O.#: 10985-001-001-9999-00
Date Received: 01-19-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 11 soil 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. The cooler temperature has been recorded on the Chain of Custody.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

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

7. All preparation/method blanks (MB) were within 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.

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

11. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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 18 pages.

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

14. As of January 27, 2001, Recra LabNet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra LabNet Philadelphia.

J. Michael Taylor
President
Lionville Laboratory Incorporated
jjw/m01-797

2-21-01
Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 0101L797

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	__6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	__6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	__6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	__6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-11/99

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, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. 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, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B118D1	Chromium, Total	8.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	5.0	MG/KG	0.22	1.0
-002	B118D2	Chromium, Total	8.2	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	4.8	MG/KG	0.22	1.0
-003	B118D3	Chromium, Total	10.3	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.1	MG/KG	0.21	1.0
-004	B118D4	Chromium, Total	9.7	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	3.3	MG/KG	0.22	1.0
-005	B118D5	Chromium, Total	10.3	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	9.3	MG/KG	0.21	1.0
-006	B118D7	Chromium, Total	0.13	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	0.24	MG/KG	0.20	1.0

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B118D8	Chromium, Total	8.5	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.5	MG/KG	0.20	1.0
-008	B118D9	Chromium, Total	10.0	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.8	MG/KG	0.21	1.0
-009	B118F0	Chromium, Total	9.2	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.7	MG/KG	0.21	1.0
-010	B118F1	Chromium, Total	8.8	MG/KG	0.05	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.7	MG/KG	0.19	1.0
-011	B118F2	Chromium, Total	9.9	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	2.6	MG/KG	0.21	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0033-MB1	Chromium, Total	0.06 u	MG/KG	0.06	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
BLANK1	01C0033-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B118D1	Chromium, Total	28.7	8.8	20.7	96.1	1.0
		Mercury, Total	0.20	0.02u	0.17	113.4	1.0
		Lead, Total	52.1	5.0	51.6	91.3	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B118D1	Chromium, Total	8.8	10.0	12.8	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Lead, Total	5.0	4.2	17.4	1.0

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/12/01

CLIENT: TNUHANFORD B00-030 H1215 LVL LOT #: 0101L797

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0033-LC1	Chromium, LCS	49.5	50.0	MG/KG	99.0
		Lead, LCS	241	250	MG/KG	96.5
LCS1	01C0033-LC1	Mercury, LCS	2.6	2.5	MG/KG	103.3

RECRA LabNet Use Only

01011797

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

ALL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client ~~Hanford~~ TRU-HANFORD 21-19-01 SAF # B00-030

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager

QC Spec Del Std TAT 21 day

Date Rec'd 1-19-01 Date Due 2-9-01

Account #

		A	B					C							
Refrigerator #		10	10					10							
#/Type Container	Liquid														
	Solid	1AG	1AG					1AG							
Volume	Liquid														
	Solid	250	250					250							
Preservatives		—	—					—							
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb.			Metal	CN						
		RECRA LabNet Use Only													
			OLC25H	OPCB				Cr Pb Hg							

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	B118D1			S	1-16-01	0850		1	1					1					
002	D2					0920		1	1					1					
003	D3					1015		1	1					1					
004	D4					1012		1	1					1					
005	D5					0850		1	1					1					
006	D7					0845		1	1					1					
007	D8					0855		1	1					1					
008	D9					0917		1	1					1					
009	F0					0928		1	1					1					
010	F1					0935		1	1					1					

Special Instructions: SAF B00-030

Run Matrix QC

PCB < 50ppm (per previous data)

DATE/REVISIONS:

1. Ice melted not Cold ✓
2. Torch -
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered

Airbill # Air Bill

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 13.5 °C

Relinquished by	Received by	Date	Time
FedEx	[illegible]	1-19-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 2950 9252 9229 3-61

RECRA LabNet Use Only
01011797

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~Hanford~~ Tru-Hanford 800-030 (1-19-01)
Est. Final Proj. Sampling Date
Project #
Project Contact/Phone #
RECRA Project Manager
QC Del TAT
Date Rec'd Date Due
Account #

See Page 1

		A	B	C
Refrigerator #		6	6	6
#/Type Container	Liquid			
	Solid	1AG	1AG	1AG
Volume	Liquid			
	Solid	250	250	250
Preservatives		—	—	—

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN
	OC25H	8PCB		Cr Pb Hg	

RECRA LabNet Use Only

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb	Metal	CN
011	B118F2			S	4-16-01	0855		1	1		1	

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	V. Hernandez	1-19-01	0945

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # See Page
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec'd Y or N

Cooler Temp. ____ °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 1 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone	SAF No.: B00-030	
Ice Chest No.: 7AZ	Field Logbook No.: EL-1535	COA: R607F62600	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: HMSR # 000843	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
PCB's Previous Data indicates <50ppm

Special Handling and/or Storage
PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	60mL	250mL	250mL	250mL	100mL				
SAMPLE ANALYSIS	Isotopic-Plutonium; Isotopic Uranium; Americium-241	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B118D1	SOIL	1-16-01	0850			✓	✓	✓					A1
B118D2	SOIL	1-16-01	0920			✓	✓	✓					A2
B118D3	SOIL	1-16-01	1015			✓	✓	✓					A3
B118D4	SOIL	1-16-01	1012			✓	✓	✓					A4
B118D5	SOIL	1-16-01	0858			✓	✓	✓					A1

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	Stankovich	1-16-01 1515	R. Thorson	1-16-01 1515
Relinquished By	R. Thorson	1/16/01 1615	Stored in Ref 3C 3728	1/16/01 1615
Relinquished By (RT 1.17.01)	Removed from Ref 3C 3728	1/17/01 0840	R. Thorson	1/17/01 0800
Relinquished By	R. Thorson	1/17/01 1000	FED EX	
Relinquished By	FedEx	1-19-01 0945		1-19-01 0945
Relinquished By			Received By	

SPECIAL INSTRUCTIONS
1-16-01
(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~
RT 1.17.01

Tie All To: BOT RT 1.17.01
B106PS

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 2 of 2

Collector R. Nielson/M. Stankovich	Company Contact Mike Stankovich	Telephone No. 531-7620	Project Coordinator TRENT, SJ
Project Designation 100 F Area - Full Protocol	Sampling Location 1607-F6 Shallow Zone		SAF No. B00-030
Ice Chest No. IAZ	Field Logbook No. EL-1535	COA R607F62600	Method of Shipment Federal Express
Shipped To TMA/RECRA	Offsite Property No. HMSR# 000843		Bill of Lading/Air Bill No. NA

Price Code 8L

Air Quality ☐

Data Turnaround 21 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's previous DATA indicates 550ppm

Special Handling and/or Storage

PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None					
Type of Container	aG	aG	aG	aG	aG	aG					
No. of Container(s)	1	1	1	1	1	1					
Volume	60mL	60mL	250mL	250mL	250mL	100mL					
SAMPLE ANALYSIS	Isotopic Plutonium; Isotopic Uranium; Americium-241; Technetium-99	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14;	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.					
Sample No.	Matrix *	Sample Date	Sample Time								
B118D7	SOIL	1-16-01	0845			✓	✓	✓			EB

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
S Stankovich	1-16-01 1515	R.Thoren	1-16-01 1515
R.Thoren	1-16-01 1615	STORED IN RT 1-16-01 Ref 3C 3728	1-16-01 1615
Removed from Ref 3C 3728	1-17-01 0800	R.Thoren	1-17-01 0800
R.Thoren	1-17-01 1000	FEDEX	
Fed Ex	1-19-01 0945	V. Alexander	1-19-01 0945

RT 1.17.01

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)

~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1.17.01

Tie all to B106P5

Matrix *

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-04	Page 1 of 200

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Overburden	SAF No.: B00-030	
Ice Chest No.: 1A2	Field Logbook No.: EL-1535	COA: R607F62600	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: HMSR #0000843	Bill of Lading/Air Bill No.: 1004	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous DATA indicates <50ppm

Special Handling and/or Storage

PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	60mL	250mL	250mL	250mL	1000mL				
SAMPLE ANALYSIS	~~Isotopic Plutonium; Isotopic Uranium; Americium-241~~ 1-16-01	~~Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99~~	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B118D8	SOIL	1-16-01	0855			✓	✓	✓					A1
B118D9	SOIL	1-16-01	0917			✓	✓	✓					A2
B118F0	SOIL	1-16-01	0928			✓	✓	✓					A3
B118F1	SOIL	1-16-01	0935			✓	✓	✓					A4
B118F2	SOIL	1-16-01	0853			✓	✓	✓					A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Stankovich	1-16-01 1515	R. Thorem	1-16-01 1515
R. Thorem	1-16-01 1615	Stored in Ref 3C 3728	1-16-01 1615
Ref 3C 3728	1-17-01 0800	R. Thorem	1-17-01 0800
R. Thorem	1-17-01 1060	FEDEX	
Fed Ex	1-19-01 0945	K. Thomas	1-19-01 0945
Fed Ex	1-19-01 0945	K. Thomas	1-19-01 0945

RT 1-17-01

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)

~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1-17-01

Tie All TO B06P5

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

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

BHI-EE-011 (10/99)

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-030 H1215

DATE RECEIVED: 01/19/01 LVL LOT # :0101L797

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B118D1	001	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D1	001 MS	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D1	001 MSD	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D2	002	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D3	003	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D3	003 R1	S	01LE0156	01/16/01	02/13/01	02/16/01
B118D4	004	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D5	005	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D7	006	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D8	007	S	01LE0069	01/16/01	01/22/01	02/08/01
B118D9	008	S	01LE0069	01/16/01	01/22/01	02/08/01
B118F0	009	S	01LE0069	01/16/01	01/22/01	02/08/01
B118F1	010	S	01LE0069	01/16/01	01/22/01	02/08/01
B118F2	011	S	01LE0069	01/16/01	01/22/01	02/08/01

LAB QC:

SBLKOP	MB1	S	01LE0069	N/A	01/22/01	02/06/01
SBLKOP	MB1 BS	S	01LE0069	N/A	01/22/01	02/06/01
SBLKQQ	MB1	S	01LE0156	N/A	02/13/01	02/20/01
SBLKQQ	MB1 BS	S	01LE0156	N/A	02/13/01	02/20/01
SBLKQQ	MB1 BSD	S	01LE0156	N/A	02/13/01	02/20/01

MAR 2001
RECEIVED

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B00-030
LVL#: 0101L797
SDG/SAF#: H1215/B01-033

W.O.#: 10985-001-001-9999-00
Date Received: 01-19-01

SEMIVOLATILE

The set of samples consisted of eleven (11) soil samples collected on 01-16-01.

The samples and their associated QC samples were extracted on 01-22-01, re-extracted on 02-13-00, and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compound on 02-06,08,16,20-01.

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

1. The cooler temperature upon receipt has been recorded on the chain-of-custody.

2. Sample B11803 was re-extracted outside required holding times.

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

4. Three (3) of one hundred fourteen (114) surrogate recoveries were outside EPA QC limits. EPA CLP surrogate recovery criteria are not met for Sample B11803. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

5. The blank spike and matrix spike recoveries were within EPA QC limits.

6. The method blank 01LE0069 contained the common laboratory contaminant Bis(2-Ethylhexyl)phthalate at a level less than the CRQL.

7. All internal standard area and retention time criteria were met.

8. Manual integrations are performed according to OP L-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 Section III ("Technical Flags For Manual Integration"); hard copies of the integrations have been included with the quantitation data.

9. As of January 27, 2001, Recra Labnet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra Labnet Philadelphia.

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

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

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.

By _____ 02-26-01

J. Michael Taylor
President
Lionville Laboratory Incorporated

Date

pef\gorup\data\bna\tnu-hanford-01-797.doc

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 01M5061

Initiator: Robert Carden Batch: 01OLC797 Parameter: 0625H
Date: 2/9/01 Samples: -003 Matrix: Soil
Client: TNU Hanford Method: SW846/MCAWW/CLP/ Prep Batch: 01LE0069

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Low IS recoveries - 2 Fluorophenol, acenaphthene
SURR ~~[illegible]~~ phenols
Acenaphthene nitrobenzene-d5

2. Known or Probable Causes(s)

Extraction blunder

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: [signature]

✓ 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] 2/14/01 Other Explanation:

X Verified re-[log][leach][extract][digest][analysis] (circle) DAL 2/21/01
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

Batch 01LE0156

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
__	X Initiator	__	__ Metals: Doughty
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
I	X Project Mgr: Stone/Johnson	__	__ GC/LC: Pastor
__	X Technical Mgr: Wesson/Daniels	I	X MS: Rycklak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	X Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Doughty/Kiger	__	__ Other: _____

A

GLOSSARY OF BNA DATA

DATA QUALIFIERS

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

mmz\10-94\gloss.bna

GLOSSARY OF BNA DATA

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.

mmz\10-94\gloss.bna

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 02/21/01 10:34

RFW Batch Number: **0101L797** Client: **TNUHANFORD B00-030 H1215** Work Order: 10985001001 Page: 1a

	Cust ID:	B118D1		B118D1		B118D1		B118D2		B118D3		B118D3	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		003	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG REPREP	
Surrogate Recovery	Nitrobenzene-d5	81	%	79	%	77	%	79	%	5 *	%	78	%
	2-Fluorobiphenyl	81	%	81	%	73	%	77	%	51	%	80	%
	Terphenyl-d14	98	%	89	%	89	%	92	%	85	%	98	%
	Phenol-d5	82	%	84	%	78	%	85	%	23 *	%	78	%
	2-Fluorophenol	70	%	76	%	69	%	74	%	2 *	%	73	%
	2,4,6-Tribromophenol	92	%	88	%	78	%	76	%	71	%	93	%
Phenol		350	U	81	%	75	%	360	U	84	J	350	U
bis(2-Chloroethyl)ether		350	U	350	U	350	U	360	U	340	U	350	U
2-Chlorophenol		350	U	77	%	72	%	360	U	340	U	350	U
1,3-Dichlorobenzene		350	U	350	U	350	U	360	U	340	U	350	U
1,4-Dichlorobenzene		350	U	68	%	63	%	360	U	340	U	350	U
1,2-Dichlorobenzene		350	U	350	U	350	U	360	U	340	U	350	U
2-Methylphenol		350	U	350	U	350	U	360	U	340	U	350	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	350	U	360	U	340	U	350	U
4-Methylphenol		350	U	350	U	350	U	360	U	340	U	350	U
N-Nitroso-di-n-propylamine		350	U	91	%	87	%	360	U	340	U	350	U
Hexachloroethane		350	U	350	U	350	U	360	U	340	U	350	U
Nitrobenzene		350	U	350	U	350	U	360	U	340	U	350	U
Isophorone		350	U	350	U	350	U	360	U	340	U	350	U
2-Nitrophenol		350	U	350	U	350	U	360	U	340	U	350	U
2,4-Dimethylphenol		350	U	350	U	350	U	360	U	340	U	350	U
bis(2-Chloroethoxy)methane		350	U	350	U	350	U	360	U	340	U	350	U
2,4-Dichlorophenol		350	U	350	U	350	U	360	U	340	U	350	U
1,2,4-Trichlorobenzene		350	U	63	%	60	%	360	U	340	U	350	U
Naphthalene		350	U	350	U	350	U	360	U	340	U	350	U
4-Chloroaniline		350	U	350	U	350	U	360	U	340	U	350	U
Hexachlorobutadiene		350	U	350	U	350	U	360	U	340	U	350	U
4-Chloro-3-methylphenol		350	U	73	%	68	%	360	U	340	U	350	U
2-Methylnaphthalene		350	U	350	U	350	U	360	U	340	U	350	U
Hexachlorocyclopentadiene		350	U	350	U	350	U	360	U	340	U	350	U
2,4,6-Trichlorophenol		350	U	350	U	350	U	360	U	340	U	350	U
2,4,5-Trichlorophenol		880	U	870	U	890	U	890	U	850	U	880	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0101L797 Client: TNUHANFORD B00-030 H1215 Work Order: 10985001001 Page: 1b

Cust ID:	B118D1		B118D1		B118D1		B118D2		B118D3		B118D3	
RFW#:	001		001 MS		001 MSD		002		003		003 REPREP	
2-Chloronaphthalene	350	U	350	U	350	U	360	U	340	U	350	U
2-Nitroaniline	880	U	870	U	890	U	890	U	850	U	880	U
Dimethylphthalate	350	U	350	U	350	U	360	U	340	U	350	U
Acenaphthylene	350	U	350	U	350	U	360	U	340	U	350	U
2,6-Dinitrotoluene	350	U	350	U	350	U	360	U	340	U	350	U
3-Nitroaniline	880	U	870	U	890	U	890	U	850	U	880	U
Acenaphthene	350	U	78	%	71	%	360	U	340	U	350	U
2,4-Dinitrophenol	880	U	870	U	890	U	890	U	850	U	880	U
4-Nitrophenol	880	U	83	%	71	%	890	U	850	U	880	U
Dibenzofuran	350	U	350	U	350	U	360	U	340	U	350	U
2,4-Dinitrotoluene	350	U	73	%	65	%	360	U	340	U	350	U
Diethylphthalate	24	J	350	U	350	U	360	U	340	U	350	U
4-Chlorophenyl-phenylether	350	U	350	U	350	U	360	U	340	U	350	U
Fluorene	350	U	350	U	350	U	360	U	340	U	350	U
4-Nitroaniline	880	U	870	U	890	U	890	U	850	U	880	U
4,6-Dinitro-2-methylphenol	880	U	870	U	890	U	890	U	850	U	880	U
N-Nitrosodiphenylamine (1)	350	U	350	U	350	U	360	U	340	U	350	U
4-Bromophenyl-phenylether	350	U	350	U	350	U	360	U	340	U	350	U
Hexachlorobenzene	350	U	350	U	350	U	360	U	340	U	350	U
Pentachlorophenol	880	U	77	%	68	%	890	U	850	U	880	U
Phenanthrene	350	U	350	U	350	U	360	U	340	U	350	U
Anthracene	350	U	350	U	350	U	360	U	340	U	350	U
Carbazole	350	U	350	U	350	U	360	U	340	U	350	U
Di-n-butylphthalate	120	J	350	U	350	U	360	U	340	U	350	U
Fluoranthene	350	U	350	U	350	U	360	U	340	U	350	U
Pyrene	350	U	79	%	78	%	360	U	340	U	350	U
Butylbenzylphthalate	350	U	350	U	350	U	360	U	340	U	350	U
3,3'-Dichlorobenzidine	350	U	350	U	350	U	360	U	340	U	350	U
Benzo(a)anthracene	350	U	350	U	350	U	360	U	340	U	350	U
Chrysene	350	U	350	U	350	U	360	U	340	U	350	U
bis(2-Ethylhexyl)phthalate	42	JB	21	JB	20	JB	27	JB	23	JB	350	U
Di-n-octyl phthalate	350	U	350	U	350	U	360	U	340	U	350	U
Benzo(b)fluoranthene	350	U	350	U	350	U	360	U	340	U	350	U
Benzo(k)fluoranthene	350	U	350	U	350	U	360	U	340	U	350	U
Benzo(a)pyrene	350	U	350	U	350	U	360	U	340	U	350	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	350	U	360	U	340	U	350	U
Dibenz(a,h)anthracene	350	U	350	U	350	U	360	U	340	U	350	U
Benzo(g,h,i)perylene	350	U	350	U	350	U	360	U	340	U	350	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 02/21/01 10:34

RFW Batch Number: **0101L797** Client: **TNUHANFORD B00-030 H1215** Work Order: 10985001001 Page: 2a

	Cust ID:	B118D4		B118D5		B118D7		B118D8		B118D9		B118F0	
Sample Information	RFW#:	004		005		006		007		008		009	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	80	%	82	%	78	%	74	%	72	%	58	%
	2-Fluorobiphenyl	79	%	81	%	77	%	73	%	71	%	59	%
	Terphenyl-d14	106	%	108	%	83	%	98	%	95	%	77	%
	Phenol-d5	82	%	83	%	88	%	78	%	81	%	64	%
	2-Fluorophenol	75	%	76	%	79	%	70	%	71	%	57	%
	2,4,6-Tribromophenol	76	%	79	%	70	%	74	%	73	%	56	%
			fl		fl		fl		fl		fl		fl
Phenol		360	U	350	U	310	U	350	U	350	U	350	U
bis(2-Chloroethyl)ether		360	U	350	U	310	U	350	U	350	U	350	U
2-Chlorophenol		360	U	350	U	310	U	350	U	350	U	350	U
1,3-Dichlorobenzene		360	U	350	U	310	U	350	U	350	U	350	U
1,4-Dichlorobenzene		360	U	350	U	310	U	350	U	350	U	350	U
1,2-Dichlorobenzene		360	U	350	U	310	U	350	U	350	U	350	U
2-Methylphenol		360	U	350	U	310	U	350	U	350	U	350	U
2,2'-oxybis(1-Chloropropane)		360	U	350	U	310	U	350	U	350	U	350	U
4-Methylphenol		360	U	350	U	310	U	350	U	350	U	350	U
N-Nitroso-di-n-propylamine		360	U	350	U	310	U	350	U	350	U	350	U
Hexachloroethane		360	U	350	U	310	U	350	U	350	U	350	U
Nitrobenzene		360	U	350	U	310	U	350	U	350	U	350	U
Isophorone		360	U	350	U	310	U	350	U	350	U	350	U
2-Nitrophenol		360	U	350	U	310	U	350	U	350	U	350	U
2,4-Dimethylphenol		360	U	350	U	310	U	350	U	350	U	350	U
bis(2-Chloroethoxy)methane		360	U	350	U	310	U	350	U	350	U	350	U
2,4-Dichlorophenol		360	U	350	U	310	U	350	U	350	U	350	U
1,2,4-Trichlorobenzene		360	U	350	U	310	U	350	U	350	U	350	U
Naphthalene		360	U	350	U	310	U	350	U	350	U	350	U
4-Chloroaniline		360	U	350	U	310	U	350	U	350	U	350	U
Hexachlorobutadiene		360	U	350	U	310	U	350	U	350	U	350	U
4-Chloro-3-methylphenol		360	U	350	U	310	U	350	U	350	U	350	U
2-Methylnaphthalene		360	U	350	U	310	U	350	U	350	U	350	U
Hexachlorocyclopentadiene		360	U	350	U	310	U	350	U	350	U	350	U
2,4,6-Trichlorophenol		360	U	350	U	310	U	350	U	350	U	350	U
2,4,5-Trichlorophenol		910	U	870	U	780	U	870	U	870	U	880	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0101L797 Client: TNUHANFORD B00-030 H1215 Work Order: 10985001001 Page: 2b

Cust ID:	B118D4		B118D5		B118D7		B118D8		B118D9		B118F0	
RFW#:	004		005		006		007		008		009	
2-Chloronaphthalene	360	U	350	U	310	U	350	U	350	U	350	U
2-Nitroaniline	910	U	870	U	780	U	870	U	870	U	880	U
Dimethylphthalate	360	U	350	U	310	U	350	U	350	U	350	U
Acenaphthylene	360	U	350	U	310	U	350	U	350	U	350	U
2,6-Dinitrotoluene	360	U	350	U	310	U	350	U	350	U	350	U
3-Nitroaniline	910	U	870	U	780	U	870	U	870	U	880	U
Acenaphthene	360	U	350	U	310	U	350	U	350	U	350	U
2,4-Dinitrophenol	910	U	870	U	780	U	870	U	870	U	880	U
4-Nitrophenol	910	U	870	U	780	U	870	U	870	U	880	U
Dibenzofuran	360	U	350	U	310	U	350	U	350	U	350	U
2,4-Dinitrotoluene	360	U	350	U	310	U	350	U	350	U	350	U
Diethylphthalate	360	U	350	U	310	U	350	U	350	U	350	U
4-Chlorophenyl-phenylether	360	U	350	U	310	U	350	U	350	U	350	U
Fluorene	360	U	350	U	310	U	350	U	350	U	350	U
4-Nitroaniline	910	U	870	U	780	U	870	U	870	U	880	U
4,6-Dinitro-2-methylphenol	910	U	870	U	780	U	870	U	870	U	880	U
N-Nitrosodiphenylamine (1)	360	U	350	U	310	U	350	U	350	U	350	U
4-Bromophenyl-phenylether	360	U	350	U	310	U	350	U	350	U	350	U
Hexachlorobenzene	360	U	350	U	310	U	350	U	350	U	350	U
Pentachlorophenol	910	U	870	U	780	U	870	U	870	U	880	U
Phenanthrene	360	U	350	U	310	U	350	U	350	U	350	U
Anthracene	360	U	350	U	310	U	350	U	350	U	350	U
Carbazole	360	U	350	U	310	U	350	U	350	U	350	U
Di-n-butylphthalate	360	U	350	U	310	U	350	U	350	U	350	U
Fluoranthene	360	U	350	U	310	U	350	U	350	U	350	U
Pyrene	22	J	350	U	310	U	350	U	350	U	350	U
Butylbenzylphthalate	360	U	350	U	310	U	350	U	350	U	350	U
3,3'-Dichlorobenzidine	360	U	350	U	310	U	350	U	350	U	350	U
Benzo(a)anthracene	360	U	350	U	310	U	350	U	350	U	350	U
Chrysene	360	U	350	U	310	U	350	U	350	U	350	U
bis(2-Ethylhexyl)phthalate	24	JB	77	JB	55	JB	84	JB	94	JB	84	JB
Di-n-octyl phthalate	360	U	350	U	310	U	350	U	350	U	350	U
Benzo(b)fluoranthene	360	U	350	U	310	U	350	U	350	U	350	U
Benzo(k)fluoranthene	360	U	350	U	310	U	350	U	350	U	350	U
Benzo(a)pyrene	360	U	350	U	310	U	350	U	350	U	350	U
Indeno(1,2,3-cd)pyrene	360	U	350	U	310	U	350	U	350	U	350	U
Dibenz(a,h)anthracene	360	U	350	U	310	U	350	U	350	U	350	U
Benzo(g,h,i)perylene	360	U	350	U	310	U	350	U	350	U	350	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 02/21/01 10:34

RFW Batch Number: **0101L797** Client: **TNUHANFORD B00-030 H1215** Work Order: 10985001001 Page: 3a

	Cust ID:	B118F1		B118F2		SBLKOP		SBLKOP BS		SBLKQQ		SBLKQQ BS	
Sample Information	RFW#:	010		011		01LE0069-MB1		01LE0069-MB1		01LE0156-MB1		01LE0156-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	81	%	75	%	74	%	76	%	77	%	75	%
	2-Fluorobiphenyl	82	%	74	%	79	%	84	%	77	%	79	%
	Terphenyl-d14	102	%	96	%	102	%	101	%	113	%	106	%
	Phenol-d5	92	%	87	%	74	%	73	%	75	%	68	%
	2-Fluorophenol	82	%	78	%	72	%	71	%	70	%	62	%
	2,4,6-Tribromophenol	81	%	76	%	75	%	80	%	82	%	89	%
		fl		fl		fl		fl		fl		fl	
Phenol		350	U	350	U	330	U	70	%	330	U	67	%
bis(2-Chloroethyl)ether		350	U	350	U	330	U	330	U	330	U	330	U
2-Chlorophenol		350	U	350	U	330	U	76	%	330	U	70	%
1,3-Dichlorobenzene		350	U	350	U	330	U	330	U	330	U	330	U
1,4-Dichlorobenzene		350	U	350	U	330	U	74	%	330	U	63	%
1,2-Dichlorobenzene		350	U	350	U	330	U	330	U	330	U	330	U
2-Methylphenol		350	U	350	U	330	U	330	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	330	U	330	U	330	U	330	U
4-Methylphenol		350	U	350	U	330	U	330	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	350	U	330	U	84	%	330	U	79	%
Hexachloroethane		350	U	350	U	330	U	330	U	330	U	330	U
Nitrobenzene		350	U	350	U	330	U	330	U	330	U	330	U
Isophorone		350	U	350	U	330	U	330	U	330	U	330	U
2-Nitrophenol		350	U	350	U	330	U	330	U	330	U	330	U
2,4-Dimethylphenol		350	U	350	U	330	U	330	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	350	U	330	U	330	U	330	U	330	U
2,4-Dichlorophenol		350	U	350	U	330	U	330	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	350	U	330	U	76	%	330	U	75	%
Naphthalene		350	U	350	U	330	U	330	U	330	U	330	U
4-Chloroaniline		350	U	350	U	330	U	330	U	330	U	330	U
Hexachlorobutadiene		350	U	350	U	330	U	330	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	350	U	330	U	73	%	330	U	69	%
2-Methylnaphthalene		350	U	350	U	330	U	330	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	350	U	330	U	330	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	350	U	330	U	330	U	330	U	330	U
2,4,5-Trichlorophenol		870	U	880	U	830	U	830	U	830	U	830	U

*= Outside of EPA CLP QC limits.

3

Cust ID:	B118F1		B118F2		SBLKOP		SBLKOP BS		SBLKQQ		SBLKQQ BS	
RFW#:	010		011		01LE0069-MB1		01LE0069-MB1		01LE0156-MB1		01LE0156-MB1	
2-Chloronaphthalene	350	U	350	U	330	U	330	U	330	U	330	U
2-Nitroaniline	870	U	880	U	830	U	830	U	830	U	830	U
Dimethylphthalate	350	U	350	U	330	U	330	U	330	U	330	U
Acenaphthylene	350	U	350	U	330	U	330	U	330	U	330	U
2,6-Dinitrotoluene	350	U	350	U	330	U	330	U	330	U	330	U
3-Nitroaniline	870	U	880	U	830	U	830	U	830	U	830	U
Acenaphthene	350	U	350	U	330	U	77	%	330	U	70	%
2,4-Dinitrophenol	870	U	880	U	830	U	830	U	830	U	830	U
4-Nitrophenol	870	U	880	U	830	U	66	%	830	U	89	%
Dibenzofuran	350	U	350	U	330	U	330	U	330	U	330	U
2,4-Dinitrotoluene	350	U	350	U	330	U	76	%	330	U	77	%
Diethylphthalate	350	U	350	U	330	U	330	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	350	U	330	U	330	U	330	U	330	U
Fluorene	350	U	350	U	330	U	330	U	330	U	330	U
4-Nitroaniline	870	U	880	U	830	U	830	U	830	U	830	U
4,6-Dinitro-2-methylphenol	870	U	880	U	830	U	830	U	830	U	830	U
N-Nitrosodiphenylamine (1)	350	U	350	U	330	U	330	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	350	U	330	U	330	U	330	U	330	U
Hexachlorobenzene	350	U	350	U	330	U	330	U	330	U	330	U
Pentachlorophenol	870	U	880	U	830	U	86	%	830	U	85	%
Phenanthrene	350	U	350	U	330	U	330	U	330	U	330	U
Anthracene	350	U	350	U	330	U	330	U	330	U	330	U
Carbazole	350	U	350	U	330	U	330	U	330	U	330	U
Di-n-butylphthalate	350	U	350	U	330	U	330	U	330	U	330	U
Fluoranthene	350	U	350	U	330	U	330	U	330	U	330	U
Pyrene	350	U	350	U	330	U	89	%	330	U	97	%
Butylbenzylphthalate	350	U	350	U	330	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	350	U	330	U	330	U	330	U	330	U
Benzo(a)anthracene	350	U	350	U	330	U	330	U	330	U	330	U
Chrysene	350	U	350	U	330	U	330	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	74	JB	68	JB	64	J	70	JB	330	U	86	J
Di-n-octyl phthalate	350	U	350	U	330	U	330	U	330	U	330	U
Benzo(b)fluoranthene	350	U	350	U	330	U	330	U	330	U	330	U
Benzo(k)fluoranthene	350	U	350	U	330	U	330	U	330	U	330	U
Benzo(a)pyrene	350	U	350	U	330	U	330	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	330	U	330	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	350	U	330	U	330	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	350	U	330	U	330	U	330	U	330	U

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

Cust ID: SBLKQQ BSD

Sample Information	RFW#:	01LE0156-MB1
	Matrix:	SOIL
	D.F.:	1.00
	Units:	UG/KG

Surrogate Recovery	Nitrobenzene-d5	73	%
	2-Fluorobiphenyl	75	%
	Terphenyl-d14	101	%
	Phenol-d5	65	%
	2-Fluorophenol	62	%
	2,4,6-Tribromophenol	88	%

Phenol	65	%
bis(2-Chloroethyl)ether	330	U
2-Chlorophenol	67	%
1,3-Dichlorobenzene	330	U
1,4-Dichlorobenzene	61	%
1,2-Dichlorobenzene	330	U
2-Methylphenol	330	U
2,2'-oxybis(1-Chloropropane)	330	U
4-Methylphenol	330	U
N-Nitroso-di-n-propylamine	67	%
Hexachloroethane	330	U
Nitrobenzene	330	U
Isophorone	330	U
2-Nitrophenol	330	U
2,4-Dimethylphenol	330	U
bis(2-Chloroethoxy)methane	330	U
2,4-Dichlorophenol	330	U
1,2,4-Trichlorobenzene	70	%
Naphthalene	330	U
4-Chloroaniline	330	U
Hexachlorobutadiene	330	U
4-Chloro-3-methylphenol	68	%
2-Methylnaphthalene	330	U
Hexachlorocyclopentadiene	330	U
2,4,6-Trichlorophenol	330	U
2,4,5-Trichlorophenol	830	U

*= Outside of EPA CLP QC limits.

Cust ID: SBLKQQ BSD

RFW#: 01LE0156-MB1

2-Chloronaphthalene	330	U
2-Nitroaniline	830	U
Dimethylphthalate	330	U
Acenaphthylene	330	U
2,6-Dinitrotoluene	330	U
3-Nitroaniline	830	U
Acenaphthene	69	%
2,4-Dinitrophenol	830	U
4-Nitrophenol	79	%
Dibenzofuran	330	U
2,4-Dinitrotoluene	74	%
Diethylphthalate	330	U
4-Chlorophenyl-phenylether	330	U
Fluorene	330	U
4-Nitroaniline	830	U
4,6-Dinitro-2-methylphenol	830	U
N-Nitrosodiphenylamine (1)	330	U
4-Bromophenyl-phenylether	330	U
Hexachlorobenzene	330	U
Pentachlorophenol	87	%
Phenanthrene	330	U
Anthracene	330	U
Carbazole	330	U
Di-n-butylphthalate	330	U
Fluoranthene	330	U
Pyrene	93	%
Butylbenzylphthalate	330	U
3,3'-Dichlorobenzidine	330	U
Benzo(a)anthracene	330	U
Chrysene	330	U
bis(2-Ethylhexyl)phthalate	330	U
Di-n-octyl phthalate	330	U
Benzo(b)fluoranthene	330	U
Benzo(k)fluoranthene	330	U
Benzo(a)pyrene	330	U
Indeno(1,2,3-cd)pyrene	330	U
Dibenz(a,h)anthracene	330	U
Benzo(g,h,i)perylene	330	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.

B118D1

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-001

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: A020803

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.449	500	JB
2.	UNKNOWN	23.953	200	J
3.	UNKNOWN	27.595	200	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D2

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-002

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A020806

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.444	900	JB
2.	UNKNOWN	23.951	100	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D3

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-003

Sample wt/vol: 31.2 (g/mL) G

Lab File ID: A020807

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	23.946	100	J

FORM 1 SV-TIC

RFW (v3.3)

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D3RE

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-003

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: A021612

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 02/13/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/16/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.752	300	JB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D4

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A020808

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 8 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.444	900	JB
2.	UNKNOWN	23.948	200	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D5

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-005

Sample wt/vol: 30.7 (g/mL) G

Lab File ID: A020809

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.444	700	JB
2.	UNKNOWN	23.951	80	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D7

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-006

Sample wt/vol: 32.0 (g/mL) G

Lab File ID: A020810

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.444	800	JB

FORM 1 SV-TIC RFW (v3.3)

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D8

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-007

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: A020811

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.443	700	JB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118D9

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-008

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: A020812

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.443	700	JB
2.	UNKNOWN	23.949	100	J

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118F0

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-009

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: A020813

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.443	600	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118F1

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-010

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: A020814

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.443	800	JB

FORM 1 SV-TIC

RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B118F2

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 0101L797-011

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A020815

Level: (low/med) LOW

Date Received: 01/19/01

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/08/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.443	700	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKOP

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 01LE0069-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A020611

Level: (low/med) LOW

Date Received: 01/22/01

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

Date Extracted: 01/22/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/06/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.831	600	J

FORM 1 SV-TIC RFW (v3.3)

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKQQ

Lab Name: Lionville Labs, Inc. Work Order: 10985001001

Client: TNUHANFORD B00-030 H1215

Matrix: (soil/water) SOIL

Lab Sample ID: 01LE0156-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: A022003

Level: (low/med) LOW

Date Received: 02/13/01

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

Date Extracted: 02/13/01

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/20/01

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
.1.	UNKNOWN	6.405	400	J

FORM 1 SV-TIC

RFW (v3.3)

RECRA LabNet Use Only

01011L797

Custody Transfer Record/Lab Work Request

Page 1 of 2

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client ~~Hanford~~ Tru-Hanford 21-19-01 SAF # B00-030

Est. Final Proj. Sampling Date

Project # 10985-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager AJ

QC Spec Del Std TAT 21 day

Date Rec'd 1-19-01 Date Due 2-9-01

Account #

		A	B					C							
Refrigerator #		10	10					10							
#/Type Container	Liquid														
	Solid	1AG	1AG					1AG							
Volume	Liquid														
	Solid	250	250					250							
Preservatives		—	—					—							
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		RECRA LabNet Use Only													
			0L025H	0PCB				Cr Pb Hg							

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected	0L025H	0PCB	Cr Pb Hg
001	B118D1			S	1-16-01	0850	1	1	1
002	D2					0920	1	1	1
003	D3					1015	1	1	1
004	D4					1012	1	1	1
005	D5					0850	1	1	1
006	D7					0845	1	1	1
007	D8					0855	1	1	1
008	D9					0917	1	1	1
009	F0					0928	1	1	1
010	F1					0935	1	1	1

Special Instructions: SAF B00-030

Run Matrix QC

PCB < 50ppm (per previous data)

DATE/REVISIONS:
1. Ice melted not cold to touch.
2.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ___ or Hand Delivered ✓
Airbill # Del Bell
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Labels Indicate Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

COC Tape was:
1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec'd (Y) or N

Cooler Temp. 13.5 °C

Relinquished by	Received by	Date	Time
Fed Ex	R. Newman	1-19-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 2950 9252 9228

32

RECRA LabNet Use Only

01011797

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~Hanford~~ Tru-Hanford 800-030 1-19-01

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC _____ Del _____ TAT _____

Date Rec'd _____ Date Due _____

Account #

See Page 1

		A	B					C							
Refrigerator #		6	6					6							
#/Type Container	Liquid														
	Solid	1AG	1AG					1AG							
Volume	Liquid														
	Solid	250	250					250							
Preservatives		—	—					—							
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
		RECRA LabNet Use Only													
			8025H	8PCB				Cr Pb Hg							

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
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	011	B18F2			S	1-16-01	0855		1	1					1					

Special Instructions:

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
Fed Ex	K. Fitzsimmons	1-19-01	0945				

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # _____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N

COC Record Present Upon Sample Rec't Y or N

Cooler Temp. °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 1 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone		SAF No.: B00-030
Ice Chest No.: 7AZ	Field Logbook No.: EL-1535	COA: R607F62600	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: HMSR # 000843		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous Data indicates <50ppm

Special Handling and/or Storage

PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	60mL	250mL	250mL	250mL	100mL				
SAMPLE ANALYSIS	Isotopic Plutonium; Isotopic Uranium; Americium-241	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B118D1	SOIL	1-16-01	0850			✓	✓	✓					A1
B118D2	SOIL	1-16-01	0920			✓	✓	✓					A2
B118D3	SOIL	1-16-01	1015			✓	✓	✓					A3
B118D4	SOIL	1-16-01	1012			✓	✓	✓					A4
B118D5	SOIL	1-16-01	0857			✓	✓	✓					A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-16-01 1515	R. Thorson [signature]	1-16-01 1515
R. Thorson [signature]	1/16/01 1615	Stored in Ref 3C 3728	1/16/01 1615
Removed from Ref 3C 3728	1/17/01 0800	R. Thorson [signature]	1/17/01 0800
R. Thorson [signature]	1/17/01 1000	FEDEX	
FedEx	1-19-01 0945	[signature]	1-19-01 0945

RT 1-17-01

SPECIAL INSTRUCTIONS

MA 1-16-01

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)

(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1.17.01

TIC All To: Bot RT 1.17.01 B106PS

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 2 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich; Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Air Quality ☐; Data Turnaround: 21 Days
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone	SAF No.: B00-030	
Ice Chest No.: IAZ	Field Logbook No.: EL-1535; COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: HMSR# 000843	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's previous DATA indicates 550ppm

Special Handling and/or Storage

PCB's

Preservation	~~None~~	~~None~~	Cool 4C	Cool 4C	None	~~None~~				
Type of Container	~~sG~~	~~sG~~	sG	sG	sG	~~sG~~				
No. of Container(s)			1	1	1					
Volume	60mL	60mL	250mL	250mL	250mL	100mL				
SAMPLE ANALYSIS	~~Isotopic-Plutonium; Isotopic Uranium; Americium-241~~	~~Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99~~	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B118D7	SOIL	1-16-01	0845			✓	✓	✓					EB

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	Stankovich	1-16-01 1515	R.T. Thorey	1-16-01 1515
Relinquished By	R. Thorey	1-16-01 1615	STAREDIN	1-16-01 1615
Relinquished By	Dennis Arroyo Ref 3C 3728	1-17-01 0800	R.T. Thorey	1-17-01 0800
Relinquished By	R.T. Thorey	1-17-01 1000	FEDEX	
Relinquished By	Fed Ex	1-19-01 0945		1-19-01 0945
Relinquished By			Received By	

RT 1.17.01

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1.17.01

Tie all to B106P5

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-04	Page 1 of 1

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich	Telephone No.: 531-7620	Project Coordinator: TRENT, SJ
Price Code: 8L	Data Turnaround: 21 Days	Air Quality ☐	
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Overburden	SAF No.: B00-030	
Ice Chest No.: 1A2	Field Logbook No.: EL-1535	COA: R607F62600	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: HMSR #0000843	Bill of Lading/Air Bill No.: 104	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous DATA indicates <50ppm

Special Handling and/or Storage

PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None
Type of Container	sG	sG	sG	sG	sG	sG
No. of Container(s)	1	1	1	1	1	1
Volume	60mL	60mL	250mL	250mL	250mL	1000mL
SAMPLE ANALYSIS	~~Plutonium; Isotopic Uranium; Americium-241~~	~~Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99~~	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.

1-16-01

Sample No.	Matrix *	Sample Date	Sample Time									
B118D8	SOIL	1-16-01	0855			✓	✓	✓				A1
B118D9	SOIL	1-16-01	0917			✓	✓	✓				A2
B118F0	SOIL	1-16-01	0928			✓	✓	✓				A3
B118F1	SOIL	1-16-01	0935			✓	✓	✓				A4
B118F2	SOIL	1-16-01	0853			✓	✓	✓				A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[signature]	1-16-01 1515	R. Thorem	1-16-01 1515
R. Thorem	1-16-01 1615	Stored in Ref 3C 3728	1-16-01 1615
Removed from Ref 3C 3728	1-17-01 0800	R. Thorem	1-17-01 0800
R. Thorem	1-17-01 1000	FEDEX	
Fed Ex	1-19-01 0945	[signature]	1-19-01 0945
Fed Ex	1-19-01 0945	[signature]	1-19-01 0945

RT 1-17-01

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Chromium, Lead}; Mercury - 7471 - (CV)

~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1-17-01

Tie All TO B106P5

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

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

BHI-EE-011 (10/99)

Figure 1. Sample Check-in List

Date/Time Received: 1-19-01 0945

SDG#: 01011 797

Work Order Number: — SAF# B00-030

Shipping Container ID: 1A2 Chain of Custody # B00-030-02.04

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 6°, 13°, 13.5
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 11 EA., 11 EA., 11 EA.
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ___ tape
   - ✓ custody seals
   - ___ hazard labels
   - ✓ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ___ broken
   - ___ leaking
   - ___ have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [illegible] Date: 1-19-01

Telephoned to: _____ On _____ By _____

FedEx. **Dangerous Goods Airbill** FedEx Regulatory Copy RETAIN FOR 1 YEAR

1096A580

PAGE 1 OF 3

From

1-17-01 Sender's FedEx Account Number 1887-8918-5

JOHN E. MAXWELL Phone (509) 376 7493

DUNATEK FEDERAL SERVICES, INC. FOR U.S. DOE

[redacted]

2355 STEVENS DRIVE MS H1-14

RICHLAND State WA ZIP 99352

Your Internal Billing Reference [redacted]

To

ORLETTE JOHNSON Phone 610 280-3012

RECRA LAB NET

208 WELSH POOL ROAD

LIONVILLE State PA ZIP 19341-1339

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For WEEKEND Delivery check here

3 Saturday Delivery 32 Sunday Delivery

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Express Freight Service Packages over 150 lbs.

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811511013592

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1 ☒ Dangerous Goods as per attached Shipper's Declaration

7 Payment

Bill to: 1 ☐ Sender 2 ☐ Recipient 3 ☒ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

FedEx Account No. 180361880

Credit Card No.

Total Packages	Total Weight	Total Declared Value
5	90	$ NVD

Signature Release Unavailable

374

FedEx Tracking Number

811511013592 0204

Page 1 of 1 Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS

This shipment is within the extent permitted by law: PASSENGER AND CARGO AIRCRAFT [redacted]

Airport of Departure: PASCO, WA

Airport of Destination

Shipment type: (delete non-applicable) NON-RADIOACTIVE [redacted]

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

Proper Shipping Name	Class or Division	UN or I.D. No.	Packing Group	Subsidiary Risk	Quantity and Type of Packaging	Packing Instr	Authorization
OLYCHLORINATED IPHENYLS, LIQUID	9	UN2315	II		2 FIBERBOARD BOXES 1 x 1 L 1 x 2 L	907	PACKAGED PER FEDEX LETTER 8503J DATED 3/16/95 ATTACHED
OLYCHLORINATED IPHENYLS, SOLID	9	UN2315	II		5 METAL DRUMS 2 x 5 kg EACH 1 x 1 kg	911	PACKAGED PER PI-06

Additional Handling Information

EMERGENCY RESPONSE GUIDE # 171 ATTACHED

Prepared for AIR TRANSPORT according to: (Customer MUST check one) ☐ 49 CFR ☒ ICAO / IATA

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Name/Title of Signatory: JOHN E. MAXWELL/TRAFFIC SPEC.

Place and Date: RICHLAND, WA 1-17-01

Signature (see warning above)

[redacted] (Required for U.S. Origin or Destination Shipments)

ACCEPTABLE FOR PASSENGER AIRCRAFT. THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT

ERC Radiological Counting Facility Analysis Report

RCF Number RCF8454

Sample Date & Time 9/7/00 1328

Project ID: 1607-F6 **SAF Number:** B00-029 **Date Analyzed** 9/8/00 10:30:3

Sample ID: B106P5

Gamma Energy Analysis

Nuclide		Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40		1.9E+01	+/-	5.1E+00	2.4E+00
Co-60	<	3.6E-01			3.6E-01
Cs-137	<	2.1E-01			2.1E-01
Eu-152	<	7.3E-01			7.3E-01
Eu-154	<	6.4E-01			6.4E-01
Eu-155	<	9.1E-01			9.1E-01
Tl-208		1.0E+00	+/-	4.9E-01	6.0E-01
Pb-212		5.5E-01	+/-	3.9E-01	4.7E-01
Bi-214	<	2.4E+00			2.4E+00
Pb-214		9.7E-01	+/-	3.5E-01	3.9E-01
Ra-226		7.6E+00	+/-	3.1E+00	4.1E+00
Ac-228	<	8.8E-01			8.8E-01
Pa-234	<	7.1E-01			7.1E-01
Th-234		4.3E+00	+/-	2.2E+00	3.3E+00
U-235	<	1.2E+00			1.2E+00
Am-241	<	6.7E-01			6.7E-01

797-1-11

COPY

TIE TO:
B118D1 - B118D5
B118D7
B118D8 - B118F2

Total GEA (pCi/g)	3.3E+01	+/-	1.2E+01

	Activity (pCi/g)		Error (pCi/g)	Alpha MDC (pCi/g)	Beta MDC (pCi/g)
Gross Alpha**	2.1E+00	+/-	6.8E-01	8.7E-01	
Gross Beta	2.0E+01	+/-	1.7E+00		1.1E+01

Definitions:

All errors reported at 2 standard deviations.
N/R = no result or analysis not requested. <MDC = Less than detection limit.
All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.
Rounding error may result in the reported total GEA activity differing from the sum of the > MDC GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.
The analysis of Np-237 is based on the activity of Pa-233.
U-238dau is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.
Th-232dau is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.
Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.
**The gross alpha results are not corrected for mass absorbtion
No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst G. L. Hastings 9/11/00

Report To	Fax
STANKOVICH	521-8001
KIAN KESSNER	372-9487

Report Printed: Monday, September 11, 2000

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-030 H1215

DATE RECEIVED: 01/19/01 RFW LOT # :0101L797

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B118D1	001	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D1	001 MS	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D1	001 MSD	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D2	002	S	01LE0077	01/16/01	01/23/01	02/09/01
B118D3	003	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D4	004	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D5	005	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D7	006	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D8	007	S	01LE0077	01/16/01	01/23/01	02/08/01
B118D9	008	S	01LE0077	01/16/01	01/23/01	02/08/01
B118F0	009	S	01LE0077	01/16/01	01/23/01	02/08/01
B118F1	010	S	01LE0077	01/16/01	01/23/01	02/09/01
B118F2	011	S	01LE0077	01/16/01	01/23/01	02/09/01

LAB QC:

PBLKNC	MB1	S	01LE0077	N/A	01/23/01	02/09/01
PBLKNC	MB1 BS	S	01LE0077	N/A	01/23/01	02/09/01

MAR 2001
RECEIVED

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU HANFORD B00-030
LVL#: 0101L797
SDG/SAF#: H1215/B00-030

W.O.#: 10985-001-001-9999-00
Date Received: 01-19-01

PCB

The set of samples consisted of eleven (11) soil samples collected on 01-16-01.

The samples and their associated QC samples were extracted on 01-23-01 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 02-08,09-01. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

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 cooler temperatures have been recorded on the chain-of-custody.

2. All required holding times for extraction and analysis have been met.

3. The samples and their associated QC samples received a sulfuric acid and sulfur cleanup.

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

5. Eight (8) of thirty (30) surrogate recoveries were outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).

6. The blank spike recovery was within acceptance criteria.

7. One (1) of two (2) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

8. Sample B118D2 required a five-fold instrument dilution due to the high concentrations of target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

11. Patterns for Aroclors 1254 and 1260 were identified in these samples. The reported Aroclor was chosen based on the best pattern match and fit. Quantitation was performed using congeners common to both Aroclors to give the best overall total PCB concentration.

12. As of January 27, 2001, Recra Labnet Philadelphia became Lionville Laboratory Incorporated. Some forms may still reference Recra Labnet Philadelphia.

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

by _____ 02-14-01

J. Michael Taylor
President
Lionville Laboratory Incorporated

Date

pef\r:\group\data\pest\01L-797.pcb

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 01GC062

Initiator: MB Batch: 01OL797 Parameter: OPCB
Date: 2/9/01 Samples: MSD Matrix: Soil
Client: TNU Method: SW846/MCAWW/CLP/ Prep Batch: 01LE0077

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Low AR1254 recovery in MSD at 0%. The MS and BS are ok. The sample contains AR1254 at 240 ug/kg

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description:

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

4. Project Manager Instructions...signature/date: [signature] 2/9/01

__ 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] 2/9/01 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
__	X Initiator	__	__ Metals: Doughty
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson	__	__ GC/LC: Pastor
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rycklak/Layman
__	X QA (file): Alberts	__	__ Log-in: Keppel
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Doughty/Kiger	__	__ Other: _____

L-WI-006/E-01/01

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P	=	This flag is used for a pesticide/Aroclor 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.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 02/12/01 16:51

RFW Batch Number: **0101L797** Client: **TNUHANFORD B00-030 H1215** Work Order: 10985001001 Page: 1

	Cust ID:	B118D1	B118D1	B118D1	B118D2	B118D3	B118D4
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	5.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	48 %	78 %	90 %	72 %	62 %	55 %
	Decachlorobiphenyl	30 * %	63 %	48 %	69 %	1 * %	3 * %
Aroclor-1016		35 U	35 U	35 U	180 U	35 U	35 U
Aroclor-1221		71 U	70 U	69 U	350 U	69 U	70 U
Aroclor-1232		35 U	35 U	35 U	180 U	35 U	35 U
Aroclor-1242		35 U	35 U	35 U	180 U	35 U	35 U
Aroclor-1248		35 U	35 U	35 U	180 U	35 U	35 U
Aroclor-1254		240	38 %	0 * %	410	35 U	35 U
Aroclor-1260		35 U	35 U	35 U	180 U	35 U	35 U

	Cust ID:	B118D5	B118D7	B118D8	B118D9	B118F0	B118F1
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	70 %	80 %	65 %	72 %	75 %	92 %
	Decachlorobiphenyl	2 * %	12 * %	1 * %	1 * %	55 %	59 %
Aroclor-1016		35 U	33 U	35 U	35 U	34 U	35 U
Aroclor-1221		71 U	66 U	70 U	70 U	68 U	70 U
Aroclor-1232		35 U	33 U	35 U	35 U	34 U	35 U
Aroclor-1242		35 U	33 U	35 U	35 U	34 U	35 U
Aroclor-1248		35 U	33 U	35 U	35 U	34 U	35 U
Aroclor-1254		88	33 U	35 U	35 U	34 U	35 U
Aroclor-1260		35 U	33 U	35 U	35 U	34 U	35 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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 02/12/01 16:51

RFW Batch Number: **0101L797** Client: **TNUHANFORD B00-030 H1215** Work Order: 10985001001 Page: 2

08

	Cust ID:	B118F2	PBLKNC	PBLKNC BS
Sample Information	RFW#:	011	01LE0077-MB1	01LE0077-MB1
	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		95 %	80 %	88 %
Decachlorobiphenyl		79 %	10 * %	67 %
Aroclor-1016		34 U	33 U	33 U
Aroclor-1221		69 U	67 U	67 U
Aroclor-1232		34 U	33 U	33 U
Aroclor-1242		34 U	33 U	33 U
Aroclor-1248		34 U	33 U	33 U
Aroclor-1254		34 U	33 U	63 %
Aroclor-1260		34 U	33 U	33 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

RECRA LabNet Use Only

01011797

Custody Transfer Record/Lab Work Request

Page 1 of 2

ALL

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Tru-Hanford

Client ~~Hanford~~ SAF # B00-030

Est. Final Proj. Sampling Date 2-19-01

Project # 109185-001-001-9999-00

Project Contact/Phone #

RECRA Project Manager

QC Spec Del Std TAT 21 day

Date Rec'd 1-19-01 Date Due 2-9-01

Account #

		A	B	C
Refrigerator #		10	10	10
#/Type Container	Liquid			
	Solid	1AG	1AG	1AG
Volume	Liquid			
	Solid	250	250	250
Preservatives		—	—	—

ANALYSES REQUESTED →

ORGANIC				INORG	
VOA	BNA	Pest/PCB	Herb	Metal	CN

RECRA LabNet Use Only

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected		BNA 625SH	Pest/PCB 608					Cr Pb Hg							
001	B118D1			S	1-16-01	0850		1	1					1							
002	D2					0920		1	1					1							
003	D3					1015		1	1					1							
004	D4					1012		1	1					1							
005	D5					0850		1	1					1							
006	D7					0845		1	1					1							
007	D8					0855		1	1					1							
008	D9					0917		1	1					1							
009	F0					0928		1	1					1							
010	F1			L	L	0935		1	1					1							

Special Instructions: SAF B00-030

Run Matrix QC

PCB < 50ppm (per previous data)

DATE/REVISIONS:

1. Ice melted not Cold Rd
2. Touch.
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ___ or Hand Delivered

Airbill # Del Bill

2) Ambient or Chilled

3) Received in Good Condition (Y) or N

4) Labels Indicate Properly Preserved (Y) or N

5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N

2) Unbroken on Outer Package (Y) or N

3) Present on Sample (Y) or N

4) Unbroken on Sample (Y) or N

COC Record Present Upon Sample Rec't (Y) or N

Cooler Temp. 13.5 °C

Relinquished by	Received by	Date	Time
FedEx	[illegible]	1-19-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 2950 9252 9229

RECRA LabNet Use Only
01011797

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client ~~Hanford~~ Tru-Hanford 800-030 (1-19-01)
Est. Final Proj. Sampling Date
Project #
Project Contact/Phone #
RECRA Project Manager
QC ____ Del ____ TAT ____
Date Rec'd ____ Date Due ____
Account #

See Page 1

		A	B					C							
Refrigerator #		6	6					6							
#/Type Container	Liquid														
	Solid	1AG	1AG					1AG							
Volume	Liquid														
	Solid	250	250					250							
Preservatives		—	—					—							
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal	CN						
								RECRA LabNet Use Only							
			OLCSH	SPCB				Cr Pb Hg							

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 (✓) MS	MSD	Matrix	Date Collected	Time Collected														
011	B18F2			S	1-16-01	0855		1	1					1						

Special Instructions:

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	V. Thomas	1-19-01	0945

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RECRA LabNet Use Only

Samples were:
1) Shipped ____ or Hand Delivered ____
Airbill # ____
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

See Page

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ____ °C

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 1 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich; Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Air Quality ☐; Data Turnaround: 21 Days
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone	SAF No.: B00-030	
Ice Chest No.: 7AZ	Field Logbook No.: EL-1535; COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: HMSR # 000843	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS
PCB's: Previous Data indicates <50ppm

Special Handling and/or Storage
PCB's

SAMPLE ANALYSIS												
Preservation	None	None	Cool 4C	Cool 4C	None	None						
Type of Container	~~RG~~ 1-17-01	~~RG~~ 1-17-01	sG	sG	sG	~~RG~~ 1-17-01						
No. of Container(s)	1	1	1	1	1	1						
Volume	60mL	60mL	250mL	250mL	250mL	100mL						
	Isotopic-Plutonium; Isotopic Uranium; Americium-241 mts 1-16-01	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.						
Sample No.	Matrix *	Sample Date	Sample Time									
B118D1	SOIL	1-16-01	0850			✓	✓	✓				A1
B118D2	SOIL	1-16-01	0920			✓	✓	✓				A2
B118D3	SOIL	1-16-01	1015			✓	✓	✓				A3
B118D4	SOIL	1-16-01	1012			✓	✓	✓				A4
B118D5	SOIL	1-16-01	0858			✓	✓	✓				A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Stankovich	1-16-01 1515	R. Thorson	1-16-01 1515
R. Thorson	1/16/01 1615	Stored in Ref 3L 3728	1/16/01 1615
Removed from Ref 3L 3728	1/17/01 0840	R. Thorson	1/17/01 0800
R. Thorson	1/17/01 1000	FED EX	
Fed Ex	1-19-01 0945		1-19-01 0945

SPECIAL INSTRUCTIONS
MA 1-16-01
(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)
(2) ~~Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~
RT 1-17-01

TIC All TO: BOT RT 1-17-01
BIOLAS

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-02	Page 2 of 2

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich — Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L — Data Turnaround: 21 Days — Air Quality ☐
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Shallow Zone	SAF No.: B00-030	
Ice Chest No.: IAZ	Field Logbook No.: EL-1535 — COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: #MSR# 000843	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous Data indicates 550ppm

Special Handling and/or Storage: PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None				
Type of Container	sG	sG	sG	sG	sG	sG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	60mL	250mL	250mL	250mL	100mL				
SAMPLE ANALYSIS	Isotopic Plutonium; Isotopic Uranium; Americium-241	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
B118D7	SOIL	1-16-01	0845			✓	✓	✓					E6

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
S. Stankovich	1-16-01 1515	R. Thoren	1-16-01 1515
R. Thoren	1-16-01 1615	STORED IN Ref 3C 3728	1-16-01 1615
Removed from Ref 3C 3728	1-17-01 0800	R. Thoren	1-17-01 0800
R. Thoren	1-17-01 1000	FEDEX	
FedEx	1-19-01 0945	V. Alexander	1-19-01 0945

RT 1-17-01

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)
~~(2) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1-17-01

Tie all to B106P5

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

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

BHI-EE-011 (10/99)

MS 1-16-01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B00-030-04	Page 1 of 2 1

Collector: R. Nielson/M. Stankovich	Company Contact: Mike Stankovich; Telephone No.: 531-7620	Project Coordinator: TRENT, SJ	Price Code: 8L; Data Turnaround: 21 Days; Air Quality ☐
Project Designation: 100 F Area - Full Protocol	Sampling Location: 1607-F6 Overburden	SAF No.: B00-030	
Ice Chest No.: 1A2	Field Logbook No.: EL-1535; COA: R607F62600	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: HMSR #0000843	Bill of Lading/Air Bill No.: 004	

POSSIBLE SAMPLE HAZARDS/REMARKS

PCB's: Previous DATA indicates <50ppm

Special Handling and/or Storage

PCB's

Preservation	None	None	Cool 4C	Cool 4C	None	None				
Type of Container	aG	aG	aG	aG	aG	aG				
No. of Container(s)	1	1	1	1	1	1				
Volume	60mL	60mL	250mL	250mL	250mL	1000mL				
SAMPLE ANALYSIS	Isotopic Plutonium; Isotopic Uranium; Americium-241	Strontium-89,90 - Total Sr; Nickel-63; Carbon-14; Technetium-99	PCBs - 8082	Semi-VOA - 8270A (TCL)	See item (1) in Special Instructions.	See item (2) in Special Instructions.				
	MD 1-16-01									

Sample No.	Matrix *	Sample Date	Sample Time										
B118D8	SOIL	1-16-01	0855			✓	✓	✓					A1
B118D9	SOIL	1-16-01	0917			✓	✓	✓					A2
B118F0	SOIL	1-16-01	0928			✓	✓	✓					A3
B118F1	SOIL	1-16-01	0935			✓	✓	✓					A4
B118F2	SOIL	1-16-01	0853			✓	✓	✓					A1

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Stankovich	1-16-01 1515	R Thorey	1-16-01 1515
R. Thorey	1-16-01 1615	Stored in Ref 3C 3728	1-16-01 1615
Ref 3C 3728	1-17-01 0800	R. Thorey	1-17-01 0800
R. Thorey	1-17-01 1000	FEDEX	
Fed Ex	1-19-01 0945	K Thomas	1-19-01 0945
Fed Ex	1-19-01 0945	K Thomas	1-19-01 0945

RT 1-17-01

SPECIAL INSTRUCTIONS

MD 1-16-01

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Chromium, Lead); Mercury - 7471 - (CV)

(2) ~~Gamma Spectroscopy (Gamma-137, Cobalt-60, Europium-152, Europium-154, Europium-155)~~

RT 1-17-01

Tie All TO B106P5

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

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

BHI-EE-011 (10/99)

Figure 1. Sample Check-in List

Date/Time Received: 1-19-01 0945

SDG#: 01011797

Work Order Number: — SAF# B00-030

Shipping Container ID: 1A2, Chain of Custody # B00-030-0264

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 6°, 13°, 13.5
5. Vermiculite/packing materials is Wet [ ] Dry [✓]
6. Number of samples in shipping container: 11 EA., 11EA., 11EA.
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ___ hazard labels
   - ✓ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ___ broken
   - ___ leaking
   - ___ have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [signature] Date: 1-19-01

Telephoned to: _____ On _____ By _____

FedEx. **Dangerous Goods Airbill** FedEx Regulatory Copy RETAIN FOR 1 YEAR

10944580

PAGE 1 of 3

From

1-17-01 Sender's FedEx Account Number 1882-8918-5

JOHN E. MAXWELL 442 Phone (509) 376 7493

DUNATEK FEDERAL SERVICES, INC. FOR U.S. DOE

2355 STEVENS DRIVE MS H1-14

RICHLAND State WA ZIP 99352

Your Internal Billing Reference

To

ORLETTE JOHNSON Phone (610 280-3012

RECRA LAB NET

208 WELSH POOL ROAD

LIONVILLE State PA ZIP 19341-1339

For HOLD at FedEx Location check here

1 ☐ Hold Weekday 31 ☐ Hold Saturday

For WEEKEND Delivery check here

3 ☐ Saturday Delivery 20 ☐ Sunday Delivery

Express Package Service Packages up to 150 lbs.

1 ☒ FedEx Priority Overnight 3 ☐ FedEx Standard Overnight

3 ☐ FedEx 2Day 20 ☐ FedEx Express Saver

Express Freight Service Packages over 150 lbs.

7 ☐ FedEx 1Day Freight* 8 ☐ FedEx 2Day Freight 60 ☐ FedEx 3Day Freight

*Call for Confirmation

811511013592

Questions? Call 1•800•Go•FedEx (800) 463-3339 or visit our Web site at www.fedex.com

Packaging

1 ☒ Other Packaging

Dangerous Goods cannot be shipped in FedEx packaging

Special Handling

1 ☒ Dangerous Goods as per attached Shipper's Declaration

Payment

1 ☐ Sender 2 ☐ Recipient 3 ☒ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check

FedEx Account No. 180361880

Credit Card No.

Total Packages	Total Weight	Total Declared Value
5	90	$ NVD

Signature Release Unavailable

374

FedEx Tracking Number 811511013592 0204

Page 1 of 1 Pages

Two completed and signed copies of this Declaration must be handed to the operator.

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS

This shipment is within the extension prescribed for state non-operators

PASSENGER AND CARGO AIRCRAFT

Airport of Departure: PASCO, WA

Airport of Destination

Shipment type: (delete non-applicable)

NON-RADIOACTIVE

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

Proper Shipping Name	Class or Division	UN or I.D. No.	Packing Group	Subsidiary Risk	Quantity and Type of Packaging	Packing Instr	Authorization
OLYCHLORINATED IPHENYLS, LIQUID	9	UN2315	II		2 FIBERBOARD BOXES 1 x 1 L 1 x 2 L	907	PACKAGED PER FEDEX LETTER 8503J DATED 3/16/95 ATTACHED
OLYCHLORINATED IPHENYLS, SOLID	9	UN2315	II		5 METAL DRUMS 2 x 5 kg EACH 1 x 1 kg	911	PACKAGED PER FX-06

Special Handling Information

EMERGENCY RESPONSE GUIDE # 171 ATTACHED

Prepared for AIR TRANSPORT according to: (Customer MUST check one) ☐ 49 CFR ☒ ICAO / IATA

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Name/Title of Signatory: JOHN E. MAXWELL/TRAFFIC SPEC.

Place and Date: RICHLAND, WA 1-17-01

Signature (see reverse side)

Export Control Number required for U.S. Origin or Destination Shipments

ACCEPTABLE FOR PASSENGER AIRCRAFT. THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT