H1247

0055482

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H1247 was composed of seven other solid (resin) samples designated under SAF No. B99-028 and B99-029 with a Project Designation of: 100-HR-3 & 4 Pump & Treat – Resin Sampling.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

RECEIVED
OCT 23 2001
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2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Isotopic Uranium Analyses

Sample B11250 from SDG H1175 and sample B11257 from SDG H1176 were reanalyzed for Isotopic Uranium at the request of BHI. The RPD between sample B11CH7 and its sample duplicate for U-238 was 94%, greater than the 3σ limit of 62%. The difference between sample B11CH7 and its sample duplicate was less than 2-times the RDL (1.0 pCi/g) for U-238. No other 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 Technetium-99 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

3/23/01
Date

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

SAMPLE SUMMARY

SDG 7634
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1247

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B11250	100-HR-3	SOLID		R102062-06	B99-028	B99-028-58	12/05/00 08:00
B11257	100-KR-4	SOLID		R102062-07	B99-028	B99-029-063	12/05/00 10:32
B11CH4	100-HR-3	SOLID		R102062-01	B99-028	B99-028-65	02/07/01 08:45
B11CH5	100-HR-3	SOLID		R102062-02	B99-028	B99-028-65	02/07/01 08:55
B11CH6	100-KR-4	SOLID		R102062-03	B99-028	B99-029-69	02/07/01 10:45
B11CH7	100-KR-4	SOLID		R102062-04	B99-028	B99-029-70	02/07/01 10:15
B11CH8	100-KR-4	SOLID		R102062-05	B99-028	B99-029-70	02/07/01 10:30
Method Blank		SOLID		R102062-09	B99-028		
Lab Control Sample		SOLID		R102062-08	B99-028		
Duplicate (R102062-04)	100-KR-4	SOLID		R102062-10	B99-028		02/07/01 10:15

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

QC SUMMARY

SDG 7634
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1247

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
7634	B99-028-58	B11250	SOLID	100.0			12/07/00	2	R102062-06	7634-006
	B99-028-65	B11CH4	SOLID	100.0			02/09/01	2	R102062-01	7634-001
		B11CH5	SOLID	100.0			02/09/01	2	R102062-02	7634-002
	B99-029-063	B11257	SOLID	100.0			12/07/00	2	R102062-07	7634-007
	B99-029-69	B11CH6	SOLID	100.0			02/09/01	2	R102062-03	7634-003
	B99-029-70	B11CH7	SOLID	100.0			02/09/01	2	R102062-04	7634-004
		B11CH8	SOLID	100.0			02/09/01	2	R102062-05	7634-005
		Method Blank	SOLID						R102062-09	7634-009
		Lab Control Sample	SOLID						R102062-08	7634-008
		Duplicate (R102062-04)	SOLID	100.0			02/09/01	2	R102062-10	7634-010

Lab id TMANC
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Form DVD-QS
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SAMPLE DELIVERY GROUP H1247

SDG 7634
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1247

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	6963-161	5.0	7			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	6963-161	10.0	2			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	6963-161	10.0	2			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	6963-161	10.0	2			1	1	1/1		

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 03/23/01

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SAMPLE DELIVERY GROUP H1247

WORK SUMMARY

SDG 7634
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1247

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B11250			R102062-06	7634-006	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
100-HR-3		SOLID	12/05/00							
B99-028-58	B99-028		12/07/00							
B11257			R102062-07	7634-007	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
100-KR-4		SOLID	12/05/00							
B99-029-063	B99-028		12/07/00							
B11CH4			R102062-01	7634-001	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
100-HR-3		SOLID	02/07/01							
B99-028-65	B99-028		02/09/01							
B11CH5			R102062-02	7634-002	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
100-HR-3		SOLID	02/07/01							
B99-028-65	B99-028		02/09/01							
B11CH6			R102062-03	7634-003	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
100-KR-4		SOLID	02/07/01							
B99-029-69	B99-028		02/09/01							
B11CH7			R102062-04	7634-004	H		03/13/01	03/23/01	MCM	Tritium in Soil
100-KR-4		SOLID	02/07/01	7634-004	SR		02/20/01	03/23/01	MCM	Total Strontium in Soil
B99-029-70	B99-028		02/09/01	7634-004	TC		03/03/01	03/23/01	MCM	Technetium 99 in Soil
				7634-004	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
B11CH8			R102062-05	7634-005	H		03/13/01	03/23/01	MCM	Tritium in Soil
100-KR-4		SOLID	02/07/01	7634-005	SR		02/20/01	03/23/01	MCM	Total Strontium in Soil
B99-029-70	B99-028		02/09/01	7634-005	TC		03/03/01	03/23/01	MCM	Technetium 99 in Soil
				7634-005	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
Method Blank			R102062-09	7634-009	H		03/13/01	03/23/01	MCM	Tritium in Soil
		SOLID		7634-009	SR		02/20/01	03/23/01	MCM	Total Strontium in Soil
	B99-028			7634-009	TC		03/03/01	03/23/01	MCM	Technetium 99 in Soil
				7634-009	U		02/21/01	03/23/01	MCM	Uranium, Isotopic in Soil
Lab Control Sample			R102062-08	7634-008	H		03/13/01	03/23/01	MCM	Tritium in Soil
		SOLID		7634-008	SR		02/20/01	03/23/01	MCM	Total Strontium in Soil
	B99-028			7634-008	TC		03/05/01	03/23/01	MCM	Technetium 99 in Soil
				7634-008	U		02/27/01	03/23/01	MCM	Uranium, Isotopic in Soil

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 03/23/01

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SAMPLE DELIVERY GROUP H1247

SDG 7634
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRC-SBB-207925
Case no SDG H1247

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Duplicate (R102062-04)			R102062-10	7634-010	H		03/13/01	03/23/01	MCM	Tritium in Soil
100-KR-4		SOLID	02/07/01	7634-010	SR		02/20/01	03/23/01	MCM	Total Strontium in Soil
	B99-028		02/09/01	7634-010	TC		03/05/01	03/23/01	MCM	Technetium 99 in Soil
				7634-010	U		02/27/01	03/23/01	MCM	Uranium, Isotopic in Soil

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
H	B99-028	Tritium in Soil	TRITIUM_COX_LSC	2			1	1	1	5
SR	B99-028	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TC	B99-028	Technetium 99 in Soil	TC99_TR_SEP_LSC	2			1	1	1	5
U	B99-028	Uranium, Isotopic in Soil	UISO_PLATE_AEA	7			1	1	1	10
TOTALS				13			4	4	4	25

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
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SAMPLE DELIVERY GROUP H1247

R102062-09 Method Blank

METHOD BLANK

SDG	7634	Client/Case no	Hanford	SDG H1247	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R102062-09	Client sample id	Method Blank		
Dept sample id	7634-009	Material/Matrix		SOLID	
		SAF No	B99-028		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0	0	4.9	400	U	H
Total Strontium	SR-RAD	-0.089	0.12	0.28	1.0	U	SR
Technetium 99	14133-76-7	0.038	0.25	0.82	15	U	TC
Uranium 233	U-233/234	-0.028	0.055	0.21	1.0	U	U
Uranium 235	15117-96-1	0	0.067	0.26	1.0	U	U
Uranium 238	U-238	0.028	0.055	0.21	1.0	U	U

100-HR-3/4 Pump & Treat-Resin Sampl.

QC-BLANK 37654

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

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SAMPLE DELIVERY GROUP H1247

R102062-08

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7634
Contact Melissa C. Mannion

Client/Case no Hanford SDG H1247
Case no TRC-SBB-207925

Lab sample id R102062-08
Dept sample id 7634-008

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No B99-028

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
Tritium	1410	18	5.1	400		H	1470	44	96	85-115	80-120
Total Strontium	23.9	0.62	0.17	1.0		SR	23.0	0.92	104	83-117	80-120
Technetium 99	139	5.6	0.70	15		TC	131	5.2	106	82-118	80-120
Uranium 233	17.6	2.1	1.1	1.0		U	19.3	0.77	91	81-119	80-120
Uranium 235	15.5	1.9	0.28	1.0		U	15.7	0.63	99	79-121	80-120
Uranium 238	20.4	2.2	1.0	1.0		U	21.0	0.84	97	82-118	80-120

100-HR-3/4 Pump & Treat-Resin Sampl.

QC-LCS 37653

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVQ-LCS
Version 3.06
Report date 03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-10 B11CH7

DUPLICATE

SDG	7634			Client/Case no	Hanford SDG H1247
Contact	Melissa C. Mannion			Case no	TRC-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	R102062-10	Lab sample id	R102062-04	Client sample id	B11CH7
Dept sample id	7634-010	Dept sample id	7634-004	Location/Matrix	100-KR-4 SOLID
		Received	02/09/01	Collected	02/07/01 10:15
% solids	100.0	% solids	100.0	Custody/SAF No	B99-029-70 B99-028

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
Tritium	6.12	2.8	4.3	400	J	H	6.39	2.9	4.4	J	4	99	
Total Strontium	-0.069	0.098	0.14	1.0	U	SR	0.013	0.13	0.26	U	-		
Technetium 99	0.038	0.28	0.74	15	U	TC	0.247	0.31	1.1	U	-		
Uranium 233	1.49	0.50	0.31	1.0		U	2.35	0.49	0.18		45	56	
Uranium 235	0.098	0.098	0.37	1.0	U	U	0.225	0.17	0.22	J	79	183	
Uranium 238	0.765	0.33	0.31	1.0	J	U	2.11	0.48	0.18		94	62	

100-HR-3/4 Pump & Treat-Resin Sampl.

QC-DUP#4 37655

SAF No. B99-029

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-06 B11250

DATA SHEET

SDG	7634	Client/Case no	Hanford	SDG H1247	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R102062-06	Client sample id	B11250		
Dept sample id	7634-006	Location/Matrix	100-HR-3	SOLID	
Received	12/07/00	Collected	12/05/00 08:00		
% solids	100.0	Custody/SAF No	B99-028-58	B99-028	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Uranium 233	U-233/234	8.62	1.1	0.18	1.0		U
Uranium 235	15117-96-1	0.314	0.17	0.22	1.0	J	U
Uranium 238	U-238	6.66	0.91	0.18	1.0		U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-028

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

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SAMPLE DELIVERY GROUP H1247

R102062-07 B11257

DATA SHEET

SDG	7634	Client/Case no	Hanford	SDG H1247	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R102062-07	Client sample id	B11257		
Dept sample id	7634-007	Location/Matrix	100-KR-4	SOLID	
Received	12/07/00	Collected	12/05/00 10:32		
% solids	100.0	Custody/SAF No	B99-029-063	B99-028	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Uranium 233	U-233/234	13.1	1.4	0.26	1.0		U
Uranium 235	15117-96-1	0.657	0.29	0.22	1.0	J	U
Uranium 238	U-238	9.84	1.2	0.23	1.0		U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-029

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
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TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-01 B11CH4

DATA SHEET

SDG	7634	Client/Case no	Hanford SDG H1247
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R102062-01	Client sample id	B11CH4
Dept sample id	7634-001	Location/Matrix	100-HR-3 SOLID
Received	02/09/01	Collected	02/07/01 08:45
% solids	100.0	Custody/SAF No	B99-028-65 B99-028

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Uranium 233	U-233/234	1.27	0.38	0.18	1.0		U
Uranium 235	15117-96-1	0.195	0.17	0.21	1.0	U	U
Uranium 238	U-238	0.991	0.33	0.18	1.0	J	U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-028

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-02 B11CH5

DATA SHEET

SDG	7634	Client/Case no	Hanford	SDG H1247	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R102062-02	Client sample id	B11CH5		
Dept sample id	7634-002	Location/Matrix	100-HR-3	SOLID	
Received	02/09/01	Collected	02/07/01 08:55		
% solids	100.0	Custody/SAF No	B99-028-65	B99-028	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Uranium 233	U-233/234	1.54	0.38	0.18	1.0		U
Uranium 235	15117-96-1	0.084	0.11	0.21	1.0	U	U
Uranium 238	U-238	0.943	0.28	0.18	1.0	J	U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-028

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-03 B11CH6

DATA SHEET

SDG	7634	Client/Case no	Hanford	SDG H1247	
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925		
Lab sample id	R102062-03	Client sample id	B11CH6		
Dept sample id	7634-003	Location/Matrix	100-KR-4	SOLID	
Received	02/09/01	Collected	02/07/01 10:45		
% solids	100.0	Custody/SAF No	B99-029-69	B99-028	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Uranium 233	U-233/234	9.13	1.1	0.23	1.0		U
Uranium 235	15117-96-1	0.524	0.24	0.22	1.0	J	U
Uranium 238	U-238	6.25	0.87	0.23	1.0		U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-029

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-04 B11CH7

DATA SHEET

SDG	7634	Client/Case no	Hanford SDG H1247
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R102062-04	Client sample id	B11CH7
Dept sample id	7634-004	Location/Matrix	100-KR-4 SOLID
Received	02/09/01	Collected	02/07/01 10:15
% solids	100.0	Custody/SAF No	B99-029-70 B99-028

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	6.39	2.9	4.4	400	J	H
Total Strontium	SR-RAD	0.013	0.13	0.26	1.0	U	SR
Technetium 99	14133-76-7	0.247	0.31	1.1	15	U	TC
Uranium 233	U-233/234	2.35	0.49	0.18	1.0		U
Uranium 235	15117-96-1	0.225	0.17	0.22	1.0	J	U
Uranium 238	U-238	2.11	0.48	0.18	1.0		U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-029

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

TMA / RICHMOND

SAMPLE DELIVERY GROUP H1247

R102062-05 **B11CH8**

DATA SHEET

SDG	7634	Client/Case no	Hanford SDG H1247
Contact	Melissa C. Mannion	Contract	TRC-SBB-207925
Lab sample id	R102062-05	Client sample id	B11CH8
Dept sample id	7634-005	Location/Matrix	100-KR-4 SOLID
Received	02/09/01	Collected	02/07/01 10:30
% solids	100.0	Custody/SAF No	B99-029-70 B99-028

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	5.92	3.0	4.6	400	J	H
Total Strontium	SR-RAD	-0.023	0.13	0.28	1.0	U	SR
Technetium 99	14133-76-7	0.028	0.34	1.1	15	U	TC
Uranium 233	U-233/234	0.350	0.19	0.18	1.0	J	U
Uranium 235	15117-96-1	0.057	0.057	0.22	1.0	U	U
Uranium 238	U-238	0.350	0.19	0.18	1.0	J	U

100-HR-3/4 Pump & Treat-Resin Sampl.

SAF No. B99-029

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

Test U Matrix SOLID
SDG 7634
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1247

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 6963-161											
B11250	R102062-06			7634-006	8.62	0.314 J	6.66	129	24	5	3
B11257	R102062-07			7634-007	13.1	0.657 J	9.84	133	22	7	3
B11CH4	R102062-01			7634-001	1.27	U	0.991 J	128	57	20	18
B11CH5	R102062-02			7634-002	1.54	U	0.943 J	163	63	9	12
B11CH6	R102062-03			7634-003	9.13	0.524 J	6.25	146	27	8	4
B11CH7	R102062-04			7634-004	2.35	0.225 J	2.11	111	34	11	8
B11CH8	R102062-05			7634-005	0.350 J	U	0.350 J	100	77	16	19
BLK (QC ID=37654)	R102062-09			7634-009	U	U	U				
LCS (QC ID=37653)	R102062-08			7634-008	ok	ok	ok				
Duplicate (R102062-04)	R102062-10			7634-010	ok	ok U	OUT J	195	106	13	14
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
100-HR-3/4 Pump & Treat-Resin Sampl.							Averages	138		11	

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 6963-161	2σ prep error 5.0 %			Reference Lab Notebook 6963 pg. 161												
B11250	R102062-06			0.22	0.500			96		105			78	02/20/01	02/21	SS-047
B11257	R102062-07			0.26	0.520			94		105			78	02/20/01	02/21	SS-048
B11CH4	R102062-01			0.21	0.500			91		104			14	02/20/01	02/21	SS-028
B11CH5	R102062-02			0.21	0.520			92		104			14	02/20/01	02/21	SS-029
B11CH6	R102062-03			0.23	0.500			95		105			14	02/20/01	02/21	SS-043
B11CH7	R102062-04			0.22	0.500			95		105			14	02/20/01	02/21	SS-044
B11CH8	R102062-05			0.22	0.510			94		105			14	02/20/01	02/21	SS-045
BLK (QC ID=37654)	R102062-09			0.26	0.500			81		105				02/20/01	02/21	SS-050
LCS (QC ID=37653)	R102062-08			1.1	0.500			100		829				02/20/01	02/27	SS-052
Duplicate (R102062-04) (QC ID=37655)	R102062-10			0.37	0.500			97		73			20	02/20/01	02/27	SS-020
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

Test U	Matrix SOLID
SDG 7634	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRC-SBB-207925	
Contract SDG H1247	

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	MDA	0.33	±	0.55
FOR 10 SAMPLES	YIELD	94	±	10

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Test SR Matrix SOLID
SDG 7634
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1247

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium	
Preparation batch 6963-161						
B11CH7	R102062-04			7634-004	U	
B11CH8	R102062-05			7634-005	U	
BLK (QC ID=37654)	R102062-09			7634-009	U	
LCS (QC ID=37653)	R102062-08			7634-008	ok	
Duplicate (R102062-04)	R102062-10			7634-010	-	U
Nominal values and limits from method 100-HR-3/4 Pump & Treat-Resin Sampl.				RDLs (pCi/g)	1.0	

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 6963-161 2σ prep error 10.0 % Reference Lab Notebook 6963 pg. 161																
B11CH7	R102062-04			0.26	1.02			94		100			13	02/20/01	02/20	GRB-221
B11CH8	R102062-05			0.28	1.03			86		100			13	02/20/01	02/20	GRB-223
BLK (QC ID=37654)	R102062-09			0.28	1.00			90		100				02/20/01	02/20	GRB-229
LCS (QC ID=37653)	R102062-08			0.17	1.00			85		200				02/20/01	02/20	GRB-217
Duplicate (R102062-04) (QC ID=37655)	R102062-10			0.14	1.02			90		400			13	02/20/01	02/20	GRB-223
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 5 SAMPLES
MDA 0.23 ± 0.13
YIELD 89 ± 7

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 03/23/01

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

METHOD SUMMARY

TECHNETIUM 99 IN SOIL

BETA COUNTING

Test TC Matrix SOLID
SDG 7634
Contact Melissa C. Mannion

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1247

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Technetium 99	
Preparation batch 6963-161						
B11CH7	R102062-04			7634-004	U	
B11CH8	R102062-05			7634-005	U	
BLK (QC ID=37654)	R102062-09			7634-009	U	
LCS (QC ID=37653)	R102062-08			7634-008	ok	
Duplicate (R102062-04)	R102062-10			7634-010	-	U

Nominal values and limits from method RDLs (pCi/g) 15
100-HR-3/4 Pump & Treat-Resin Sampl.

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 6963-161	2σ prep error 10.0 %				Reference Lab Notebook 6963 pg. 161											
B11CH7	R102062-04			1.1	1.01			44		50			24	02/27/01	03/03	GRB-217
B11CH8	R102062-05			1.1	1.01			46		50			24	02/27/01	03/03	GRB-218
BLK (QC ID=37654)	R102062-09			0.82	1.00			60		50				02/27/01	03/03	GRB-220
LCS (QC ID=37653)	R102062-08			0.70	1.00			72		50				02/27/01	03/05	GRB-230
Duplicate (R102062-04) (QC ID=37655)	R102062-10			0.74	1.01			50		100			26	02/27/01	03/05	GRB-204
Nominal values and limits from method				15	1.00			20-105		50			180			

PROCEDURES	REFERENCE	TC99_TR_SEP_LSC
	CP-060	Soil Preparation, rev 2
	CP-021	Preparation of Tc-99m Tracer, rev 0
	CP-002	Q.C. Preparation, rev 2
	CP-003	Tracing, rev 2
	CP-542	Technetium-99 Purification (Soil) by Extraction Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 3

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.89 ± 0.39
YIELD 54 ± 23

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 03/23/01

Test H Matrix SOLID
SDG 7634
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H1247

METHOD SUMMARY

TRITIUM IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRC-SBB-207925
Contract SDG H1247

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Tritium	
Preparation batch 6963-161						
B11CH7	R102062-04			7634-004	6.39	J
B11CH8	R102062-05			7634-005	5.92	J
BLK (QC ID=37654)	R102062-09			7634-009	U	
LCS (QC ID=37653)	R102062-08			7634-008	ok	
Duplicate (R102062-04)	R102062-10			7634-010	ok	J

Nominal values and limits from method RDLs (pCi/g) 400
100-HR-3/4 Pump & Treat-Resin Sampl.

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 6963-161	2σ prep error 10.0 %				Reference Lab Notebook 6963 pg. 161											
B11CH7	R102062-04			4.4	0.223			100		100			34	03/12/01	03/13	LSC-007
B11CH8	R102062-05			4.6	0.214			100		100			34	03/12/01	03/13	LSC-007
BLK (QC ID=37654)	R102062-09			4.9	0.200			100		100				03/12/01	03/13	LSC-007
LCS (QC ID=37653)	R102062-08			5.1	0.200			100		100				03/12/01	03/13	LSC-007
Duplicate (R102062-04) (QC ID=37655)	R102062-10			4.3	0.228			100		100			34	03/12/01	03/13	LSC-007
Nominal values and limits from method				400	0.200					25			180			

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

AVERAGES ± 2 SD MDA 4.7 ± 0.67
FOR 5 SAMPLES YIELD 100 ± 0

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 03/23/01

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-028-65	Page 1 of 1

Collector: Fahlberg/Watson	Company Contact: T Pickett	Telephone No.: 373-4630	Project Coordinator: TRENT, SJ
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100-HR-3 Pump & Treat - Resin Sampling	Sampling Location: 100 HR 3 H1247 (7634)	SAF No.: B99-028	
Ice Chest No.: ERC-00-005 (1 of 1)	Field Logbook No.: EL 1517-1	COA: R10HR3C560	Method of Shipment: Fed Ex
Shipped To: TMA/RECRA EBERLINE	Offsite Property No.: A010167	Bill of Lading/Air Bill No.: 42357954-2249	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCT rad screen for off site shipment.

SAMPLE ANALYSIS

Preservation	None											
Type of Container	aG											
No. of Container(s)	1											
Volume	60mL											
	Isotopic Uranium											
Sample No.	Matrix *	Sample Date	Sample Time									
B11CH4	OTHER SOLID	02-07-01	0845	X								
B11CH5	OTHER SOLID	02-07-01	0855	X								

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
DJ WATSON	02-07-01/1145	STORED IN REF. 2B	02-07-01/1145
Remained for Ref 2B 3728	2-8-01 0400	R. R. Thorne	2-8-01 0400
R. R. Thorne	2-8-01 0400	FED EX	2-8-01
FED. EXPRESS	2-9-01	E. Degner	2-9-01 9:30 am

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 2/7/01.
Collector not available to relinquish samples on 2/8/01 for shipment.
2-8-01

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	B99-029-69	Page 1 of 1

Collector: Fahlberg/Watson	Company Contact: T Pickett — Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N — Data Turnaround: 45 Days
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100 KR 4 H1247 (7634)	SAF No.: B99-029	Air Quality ☐
Ice Chest No.: ERC-OD 005 (1 of 1)	Field Logbook No.: EL 1517-1 — COA: R10KR4C560	Method of Shipment: Fed EX	
Shipped To: TMA/RECRA EBERLINE	Offsite Property No.: AD101167	Bill of Lading/Air Bill No.: 4235 7954-2249	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RGF rad screen for off-site shipment.

SAMPLE ANALYSIS

Preservation	None												
Type of Container	aG												
No. of Container(s)	1												
Volume	60mL												
	Isotopic Uranium												
Sample No.	Matrix *	Sample Date	Sample Time										
B11CH6	OTHER SOLID	02-07-01	1045	X									

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By: DJWATSON/	Date/Time: 02-07-01/1155	Received By: STORED IN REF. 2B	Date/Time: 02-07-01/1155
Relinquished By: Removed from REF 2B 3728	Date/Time: 0900 2.8.01	Received By: R. Thorne	Date/Time: 0900 2.8.01
Relinquished By: R. Thorne	Date/Time: 0900 2.8.01	Received By: FEDEX	Date/Time: 2-8-01
Relinquished By: FED. EXPRESS	Date/Time: 2-9-01	Received By: E. Pegram	Date/Time: 9:30 AM 2-9-01
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 2/7/01.
Collector not available to relinquish samples on 2/8/01 for shipment.
RT 2.8.01

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	B99-029-70	Page 1 of 1

Collector Fahlberg/Watson	Company Contact T Pickett	Telephone No. 373-4630	Project Coordinator TRENT, SJ
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location 100 KR4 H1247 (7634)	SAF No. B99-029	
Ice Chest No. ERC-00-005 (1of1)	Field Logbook No. EL 1517-1	COA R10KR4C560	Method of Shipment ~~Government Vehicle~~ RF. 2-7-01 Fed Ex
Shipped To (TMA)RECRA EBERLINE	Offsite Property No. ~~NA~~ RF 2-7-01 A010167		Bill of Lading/Air Bill No. ~~NA~~ RF 2-7-01 42357954-2249

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment.

SAMPLE ANALYSIS											
Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		
	Isotopic Uranium	Strontium-89,90 -- Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions.	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B11CH7	OTHER SOLID	2/7/01	1015	X	X	X	X				
B11CH8	OTHER SOLID	2/7/01	1030	X	X	X	X				

Deleted RF 2-7-01

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By	Date/Time	Received By	Date/Time
DSWATSON/	02-07-01/1155	STORED IN REF. 2B	02-07-01/1155
Relinquished By Removed from Ref 2B 3728	Date/Time 0900 2-8-01	Received By R. Thorem	Date/Time 0900 2-8-01
Relinquished By R.Thorem	Date/Time 0900 2-8-01	Received By FEDEX	Date/Time 2-8-01
Relinquished By FED. EXPRESS	Date/Time 9:30 AM 2-09-01	Received By E. Segura	Date/Time 9:30 AM 2-9-01
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

RT 2-8-01

SPECIAL INSTRUCTIONS

(1) ~~VOA - 8260A (TCL) {Chloroform, Methylenechloride}~~; VOA - 8260A (Add-On) {Trichloromonofluoromethane}
(2) Metals by ICP (TCLP) - 1311/6010 {~~Arsenic, Barium~~, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP (TCLP) Add-on - ~~1311/6010 {Antimony, Beryllium, Nickel}~~

Deleted RF 2-7-01

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 2/7/01.
Collector not available to relinquish samples on 2/8/01 for shipment.

RT 2-8-01

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		B99-028-58	Page 1 of 1
Collector: Fahlberg/Cowgill	Company Contact: T Pickett	Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N
Project Designation: 100-HR-3 Pump & Treat - Resin Sampling	Sampling Location: 100-HR-3 H1175 (7590)		SAF No.: B99-028	Air Quality ☐
Ice Chest No.: ERC99-006 (1 of 1)	Field Logbook No.: EL 1517-1	COA: R10HR3C560	Method of Shipment: Fed EX	Data Turnaround: 45 Days
Shipped To: TMA/~~REGRA~~ KF 12-5-00	Offsite Property No.: A010156		Bill of Lading/Air Bill No.: 4235 7953 1047	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. R.S. 12-5-00

Special Handling and/or Storage

** Historical data indicates that samples are less than 2000 pCi/g total activity.

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	aG	aG	aG	aG	aG	aG	~~G/P~~ aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		
SAMPLE ANALYSIS	Isotopic Uranium	Strontium-89,90 – Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions.	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time							
B11250	OTHER SOLID	12-5-00	0800	X	X	X	X			
~~B11251~~	~~OTHER SOLID~~	~~12-5-00~~	~~0816~~	~~X~~	~~X~~	~~X~~	~~X~~			
~~B11252~~	~~OTHER SOLID~~	~~12-5-00~~	~~0832~~	~~X~~	~~X~~	~~X~~	~~X~~			
~~B11253~~	~~OTHER SOLID~~	~~12-5-00~~	~~0844~~	~~X~~	~~X~~	~~X~~	~~X~~			

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R. Fahlberg / R. Fahlberg	12-5-00	R. F. Stored in Ref 2-A	12-5-00
Removed from Ref 2A 3728	12-6-00 0800	R. R. Thorne	12-6-00 0800
R. R. Thorne	12-6-00 0800	FED EX	12-06-00
FED. EXPRESS	12-07-00 10 AM	E. Segura	12-07-00 10 AM

Sign/Print Names

SPECIAL INSTRUCTIONS

~~(1) VOA - 8260A (TCL) (Chloroform, Methylenechloride); VOA - 8260A (Add-On) (Trichloromonofluoromethane)~~

(2) Metals by ICP (TCLP) ~~- 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP (TCLP) Add-on - 1311/6010 (Antimony, Beryllium,~~ Nickel)

Samples stored in Ref.# 2A at the 3728 Shipping Facility on 12/5/00. Collector not available to relinquish samples on 12/6/00 for shipment. RT 12-6-00

RT 12-6-00

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		B99-029-63	Page 1 of 1
Collector Fahlberg/Cowgill	Company Contact T Pickett	Telephone No. 373-4630	Project Coordinator TRENT. SJ	Price Code 9N Air Quality	Data Turnaround 45 Days
Project Designation 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location 100-KR-4 H1176 (7591)		SAF No. B99-029		
Ice Chest No. ERC 99-0066 (1061)	Field Logbook No. EL 1517-1	COA R10KR4C560	Method of Shipment Fed EX		
Shipped To TMA/RECRA Ref 12.5.00	Offsite Property No. A010156		Bill of Lading/Air Bill No. 4235795 3 1047		

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples

R. Fahlberg 12.5.00

Special Handling and/or Storage

** Historical data indicates that samples are less than 2000 pCi/g total activity.

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		
SAMPLE ANALYSIS	Isotopic Uranium	Strontium-89,90 – Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions		
Sample No. / Matrix * / Sample Date / Sample Time										
~~B11256~~ / ~~OTHER SOLID~~ / ~~12.5.00~~ / ~~1015~~	~~X~~	~~X~~	~~X~~	~~X~~						
B11257 / OTHER SOLID / 12.5.00 / 1032	X	X	X	X						
~~B11258~~ / ~~OTHER SOLID~~ / ~~12.5.00~~ / ~~1055~~	~~X~~	~~X~~	~~X~~	~~X~~						
~~B11259~~ / ~~OTHER SOLID~~ / ~~12.5.00~~ / ~~1102~~	~~X~~	~~X~~	~~X~~	~~X~~						

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
R Fahlberg R Fahlberg	12.5.00	Ref 2A	12.5.00 1210
Ref 2A 3728	12.6.00 0800	R T Thorson	12.6.00 0800
R T Thorson	12.6.00 0800	FED EX	12-06-00
FED EXPRESS	12-07-00 10 AM	E. Aguirre	12-07-00 10 AM

SPECIAL INSTRUCTIONS

~~(1) VOA - 8260A (TCL) (Chloroform, Methylenechloride); VOA - 8260A (Add-On) (Trichloromonofluoromethane)~~

~~(2) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP (TCLP) Add on - 1311/6010 (Antimony, Beryllium, Nickel)~~

Samples stored in Ref.# 2A at the 3728 Shipping Facility on 12/5/00

Collector not available to relinquish samples on 12/6/00 for shipment.

RT 12.6.00

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)

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD INC. Date/Time received 2-9-01 9:30 AM

CoC No. B99-028-65

Container I.D. No. ERC-00-005 Requested TAT (Days) 45 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: 2
7. Number of containers per sample: (1 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. Segura Date: 2-9-01 Time: 9:30 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 _____

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: BECHTEL HANFORD Date/Time received 2-9-01 9:30 AM

CoC No. B99-029-69, AND B99-029-70.

Container I.D. No. ERC-00-005 Requested TAT (Days) 45 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: 3
7. Number of containers per sample: CHECK (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. Segura Date: 2-9-01 Time: 9:30 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 _____

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11CH7						
% SOLIDS	001	SO	01L%S021	02/07/01	02/12/01	02/13/01
% SOLIDS	001 REP	SO	01L%S021	02/07/01	02/12/01	02/13/01
NITRATE BY IC	001	SO	01LIC013	02/07/01	02/27/01	02/27/01
NITRATE BY IC	001 REP	SO	01LIC013	02/07/01	02/27/01	02/27/01
NITRATE BY IC	001 MS	SO	01LIC013	02/07/01	02/27/01	02/27/01
TCLP	001	SO	01LTO019	02/07/01	02/28/01	03/01/01
B11CH8						
% SOLIDS	002	SO	01L%S021	02/07/01	02/12/01	02/13/01
NITRATE BY IC	002	SO	01LIC013	02/07/01	02/27/01	02/27/01
TCLP	002	SO	01LTO019	02/07/01	02/28/01	03/01/01

LAB QC:

NITRATE BY IC	MB1	S	01LIC013	N/A	02/27/01	02/27/01
NITRATE BY IC	MB1 BS	S	01LIC013	N/A	02/27/01	02/27/01

MAR 2001 RECEIVED

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B99-029 H1247
LVL#: 0102L970

W.O.#: 11343-606-001-9999-00
Date Received: 02-09-01

INORGANIC NARRATIVE

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

1. This narrative covers the analyses of 2 solid samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.

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

4. The cooler temperature was recorded on the chain of custody.

5. The method blank for Nitrate was within the method criteria.

6. The Laboratory Control Sample (LCS) for Nitrate was within the laboratory control limits.

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

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

9. Results for solid samples are reported on a dry weight basis.

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

Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

03-20-01
Date

njp\i02-970

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: Nitrate **Method:** EPA 300.0 (mod.)

Other: **Method**

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Lababoratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/20/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B11CH7	% Solids	45.2	%	0.01	1.0
		Nitrate by IC	6.19	MG/KG	2.76	1.0
-002	B11CH8	% Solids	45.3	%	0.01	1.0
		Nitrate by IC	5.73	MG/KG	2.76	1.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/20/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	01LIC013-MB1	Nitrate by IC	1.25 u	MG/KG	1.25	1.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 03/20/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B11CH7	Nitrate by IC	61.5	6.19	55.3	100.1	1.0
BLANK10	01LIC013-MB1	Nitrate by IC	26.3	1.25u	25.0	105.2	1.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 03/20/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B11CH7	% Solids	45.2	45.3	0.27	1.0
		Nitrate by IC	6.19	6.06	2.2	1.0

RECRA LabNet Use Only: 0102L970

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: ATDU: Hanford B99-029
Est. Final Proj. Sampling Date:
Project #: 11343-606-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: DS
QC: Std Del: Std TAT: 30 day
Date Rec'd: 2-9-01 Date Due: 3-11-01
Account #:

		A	B				C	D							
Refrigerator #		1	6				6	6							
#/Type Container	Liquid														
	Solid	1AG	1AG				1AG	1AG							
Volume	Liquid														
	Solid	250	250				250	500							
Preservatives		-	-				-	-							
ANALYSES REQUESTED	ORGANIC: VOA								INORG: Metal						
	ORGANIC: BNA								INORG: CN						
	ORGANIC: Pest/PCB														
	ORGANIC: Herb														
RECRA LabNet Use Only		OLCNTX	OLCSX				ICP03	ITCLP	Met(1)						

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	OLCNTX	OLCSX				ICP03	ITCLP	Met(1)						
001	B11CH7			SO	2-7-01	1015	✓	✓				✓	✓							
002	8			⊥	⊥	1036	✓	✓				✓	✓							
003	7 tclp of 001			⊥	*	-								✓						
004	⊥ 8 ⊥ 002			⊥	⊥									✓						

Special Instructions: SAF B99-029

Run Matrix QC

DATE/REVISIONS:
1. * See lab chron
2. Met(1) As, Ba, Cd, Cr, Pb, Se, Ag, Sb, Be, Ni
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___
Airbill # See below
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. 3 °C

Relinquished by	Received by	Date	Time
FedEx	TRoppel	2-9-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REVISED		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 2258

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-029-70	Page 1 of 1

Collector: Fahlberg/Watson	Company Contact: T Picken	Telephone No.: 373-4630	Project Coordinator: TRENT, SJ
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100 KR4	SAF No.: B99-029	
Ice Chest No.: ERC 99-023 (1 of 1)	Field Logbook No.: EL 1517-1	COA: R10KR4C560	Method of Shipment: ~~Government Vehicle~~ RF. 2.7.01 Fed Ex
Shipped To: TMA/RECRA	Offsite Property No.: ~~NA~~ RF 2.7.01 A01095		Bill of Lading/Air Bill No.: ~~NA~~ RF 2.7.01 42357954-2250

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment.

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	sG	sG	sG	sG	sG	sG	sG	sG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		
	Isotopic Uranium	Strontium-89,90 -- Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See Item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	See Item (2) in Special Instructions		
Sample No.	Matrix *	Sample Date	Sample Time											
B11CH7	OTHER SOLID	2/7/01	1015					X	X	X	X			
B11CH8	OTHER SOLID	2/7/01	1030					X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
DSWATSON/[illegible]	02-07-01/1153	RECEIVED IN REF. 2B	02-07-01/1165
RT 2B Removed from R.of 2B 3728	2.8.01 0900	R.T. R. Thoren	2.8.01 0900
R.T. R. Thoren	2.8.01 0900	FEDEX	
FedEx	2.9.01 0945	Thoppil	2.9.01 0945

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) [Chloroform, Methylenechloride]; VOA - 8260A (Add-On) [Trichloromonofluoromethane]
(2) Metals by ICP (TCLP) - 1311/6010 [Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver]; Metals by ICP (TCLP) Add-on - 1311/6010 [Antimony, Beryllium, Nickel]

Samples stored in Ref. 2B at the 3728 Shipping Facility on 2/7/01. Collector not available to relinquish samples on 2/8/01 for shipment.
RT 2.8.01

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)

MAR 2001 RECEIVED

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11CH7						
TCLP	001	SO	01LTO019	02/07/01	02/28/01	03/01/01
B11CH8						
TCLP	002	SO	01LTO019	02/07/01	02/28/01	03/01/01
B11CH7						
SILVER, TCLP LEACHAT	003	W	01L0091	03/01/01	03/03/01	03/03/01
SILVER, TCLP LEACHAT	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
SILVER, TCLP LEACHAT	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	003	W	01L0091	03/01/01	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	003	W	01L0091	03/01/01	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	003	W	01L0091	03/01/01	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	003	W	01L0091	03/01/01	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	003	W	01L0091	03/01/01	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
NICKEL, TCLP LEACHAT	003	W	01L0091	03/01/01	03/03/01	03/03/01
NICKEL, TCLP LEACHAT	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
NICKEL, TCLP LEACHAT	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
LEAD, TCLP LEACHATE	003	W	01L0091	03/01/01	03/03/01	03/03/01
LEAD, TCLP LEACHATE	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
LEAD, TCLP LEACHATE	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	003	W	01L0091	03/01/01	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TCLP LEACH	003	W	01L0091	03/01/01	03/03/01	03/03/01
SELENIUM, TCLP LEACH	003 REP	W	01L0091	03/01/01	03/03/01	03/03/01
SELENIUM, TCLP LEACH	003 MS	W	01L0091	03/01/01	03/03/01	03/03/01
B11CH8						
SILVER, TCLP LEACHAT	004	W	01L0091	03/01/01	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	004	W	01L0091	03/01/01	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	004	W	01L0091	03/01/01	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	004	W	01L0091	03/01/01	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	004	W	01L0091	03/01/01	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	004	W	01L0091	03/01/01	03/03/01	03/03/01
NICKEL, TCLP LEACHAT	004	W	01L0091	03/01/01	03/03/01	03/03/01
LEAD, TCLP LEACHATE	004	W	01L0091	03/01/01	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	004	W	01L0091	03/01/01	03/03/01	03/03/01
SELENIUM, TCLP LEACH	004	W	01L0091	03/01/01	03/03/01	03/03/01

LAB QC:

SILVER LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
SILVER, TCLP LEACHAT	MB1	W	01L0091	N/A	03/03/01	03/03/01
SILVER, TCLP LEACHAT	MB2	W	01L0091	N/A	03/03/01	03/03/01
ARSENIC LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	MB1	W	01L0091	N/A	03/03/01	03/03/01
ARSENIC, TCLP LEACHA	MB2	W	01L0091	N/A	03/03/01	03/03/01
BARIUM LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	MB1	W	01L0091	N/A	03/03/01	03/03/01
BARIUM, TCLP LEACHAT	MB2	W	01L0091	N/A	03/03/01	03/03/01
BERYLLIUM LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	MB1	W	01L0091	N/A	03/03/01	03/03/01
BERYLLIUM, TCLP LEAC	MB2	W	01L0091	N/A	03/03/01	03/03/01
CADMIUM LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	MB1	W	01L0091	N/A	03/03/01	03/03/01
CADMIUM, TCLP LEACHA	MB2	W	01L0091	N/A	03/03/01	03/03/01
CHROMIUM LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	MB1	W	01L0091	N/A	03/03/01	03/03/01
CHROMIUM, TCLP LEACH	MB2	W	01L0091	N/A	03/03/01	03/03/01
NICKEL LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TCLP LEACHAT	MB1	W	01L0091	N/A	03/03/01	03/03/01
NICKEL, TCLP LEACHAT	MB2	W	01L0091	N/A	03/03/01	03/03/01
LEAD LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
LEAD, TCLP LEACHATE	MB1	W	01L0091	N/A	03/03/01	03/03/01
LEAD, TCLP LEACHATE	MB2	W	01L0091	N/A	03/03/01	03/03/01
ANTIMONY LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	MB1	W	01L0091	N/A	03/03/01	03/03/01
ANTIMONY, TCLP LEACH	MB2	W	01L0091	N/A	03/03/01	03/03/01
SELENIUM LABORATORY	LC1 BS	W	01L0091	N/A	03/03/01	03/03/01
SELENIUM, TCLP LEACH	MB1	W	01L0091	N/A	03/03/01	03/03/01
SELENIUM, TCLP LEACH	MB2	W	01L0091	N/A	03/03/01	03/03/01

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B99-029
LVL#: 0102L970
SDG/SAF#: H1247/B99-029

W.O.#: 10985-001-001-9999-00
Date Received: 02-09-01

METALS CASE NARRATIVE

1. This narrative covers the analyses of 2 TCLP leachate samples.

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

   The sample was leached in a batch of twenty-one samples and only one leachate blank.

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. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

11. The TCLP extract from sample B11CH7 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method 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 14 pages.

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

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.

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.

Iain Daniels
Deputy Laboratory Manager
Lionville Laboratory Incorporated

03-13-01
Date

gmb/m02-970

LVLI
LIONVILLE LABORATORY INC

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 01021970

Leaching Procedure: __1310 ✓1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

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 03/12/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B11CH7	Silver, TCLP Leachate	3.0	u	UG/L	3.0	5.0
		Arsenic, TCLP Leachate	27.6		UG/L	16.0	5.0
		Barium, TCLP Leachate	7.3		UG/L	1.0	5.0
		Beryllium,TCLP Leachate	0.80		UG/L	0.50	5.0
		Cadmium, TCLP Leachate	1.5	u	UG/L	1.5	5.0
		Chromium, TCLP Leachate	4040		UG/L	3.5	5.0
		Nickel, TCLP Leachate	5.5	u	UG/L	5.5	5.0
		Lead, TCLP Leachate	11.0	u	UG/L	11.0	5.0
		Antimony, TCLP Leachate	8.5	u	UG/L	8.5	5.0
		Selenium, TCLP Leachate	15.5	u	UG/L	15.5	5.0
-004	B11CH8	Silver, TCLP Leachate	3.0	u	UG/L	3.0	5.0
		Arsenic, TCLP Leachate	29.1		UG/L	16.0	5.0
		Barium, TCLP Leachate	10.6		UG/L	1.0	5.0
		Beryllium,TCLP Leachate	0.70		UG/L	0.50	5.0
		Cadmium, TCLP Leachate	1.5	u	UG/L	1.5	5.0
		Chromium, TCLP Leachate	3400		UG/L	3.5	5.0
		Nickel, TCLP Leachate	5.5	u	UG/L	5.5	5.0
		Lead, TCLP Leachate	11.0	u	UG/L	11.0	5.0
		Antimony, TCLP Leachate	8.5	u	UG/L	8.5	5.0
		Selenium, TCLP Leachate	15.5	u	UG/L	15.5	5.0

Lionville Lababoratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/12/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	01L0091-MB1	Silver, TCLP Leachate	0.60	u	UG/L	0.60	1.0
		Arsenic, TCLP Leachate	3.2	u	UG/L	3.2	1.0
		Barium, TCLP Leachate	0.51		UG/L	0.20	1.0
		Beryllium,TCLP Leachate	0.10	u	UG/L	0.10	1.0
		Cadmium, TCLP Leachate	0.30	u	UG/L	0.30	1.0
		Chromium, TCLP Leachate	0.70	u	UG/L	0.70	1.0
		Nickel, TCLP Leachate	1.1	u	UG/L	1.1	1.0
		Lead, TCLP Leachate	2.2	u	UG/L	2.2	1.0
		Antimony, TCLP Leachate	1.7	u	UG/L	1.7	1.0
		Selenium, TCLP Leachate	3.1	u	UG/L	3.1	1.0
BLANK2	01L0091-MB2	Silver, TCLP Leachate	3.0	u	UG/L	3.0	5.0
		Arsenic, TCLP Leachate	16.0	u	UG/L	16.0	5.0
		Barium, TCLP Leachate	2.9		UG/L	1.0	5.0
		Beryllium,TCLP Leachate	0.50	u	UG/L	0.50	5.0
		Cadmium, TCLP Leachate	1.5	u	UG/L	1.5	5.0
		Chromium, TCLP Leachate	3.5	u	UG/L	3.5	5.0
		Nickel, TCLP Leachate	5.5	u	UG/L	5.5	5.0
		Lead, TCLP Leachate	11.0	u	UG/L	11.0	5.0
		Antimony, TCLP Leachate	8.5	u	UG/L	8.5	5.0
		Selenium, TCLP Leachate	16.9		UG/L	15.5	5.0

Lionville Lababoratory, Inc.

INORGANICS ACCURACY REPORT 03/12/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-003	B11CH7	Silver, TCLP Leachate	4970	3.0 u	5000	99.3	5.0
		Arsenic, TCLP Leachate	5030	27.6	5000	100.0	5.0
		Barium, TCLP Leachate	96500	7.3	100000	96.5	5.0
		Beryllium, TCLP Leacha	992	0.80	1000	99.1	5.0
		Cadmium, TCLP Leachate	997	1.5 u	1000	99.7	5.0
		Chromium, TCLP Leachat	8990	4040	5000	98.9	5.0
		Nickel, TCLP Leachate	999	5.5 u	1000	99.9	5.0
		Lead, TCLP Leachate	4900	11.0 u	5000	98.0	5.0
		Antimony, TCLP Leachat	1010	8.5 u	1000	101.1	5.0
		Selenium, TCLP Leachat	1040	15.5 u	1000	103.8	5.0

Lionville Lababoratory, Inc.

INORGANICS PRECISION REPORT 03/12/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-003REP	B11CH7	Silver, TCLP Leachate	3.0 u	3.0 u	NC	5.0
		Arsenic, TCLP Leachate	27.6	20.6	29.0	5.0
		Barium, TCLP Leachate	7.3	5.7	24.6	5.0
		Beryllium TCLP Leachate	0.80	0.65	20.7	5.0
		Cadmium, TCLP Leachate	1.5 u	1.5 u	NC	5.0
		Chromium, TCLP Leachate	4040	4040	0.035	5.0
		Nickel, Leachate	5.5 u	5.5 u	NC	5.0
		Lead, TCLP Leachate	11.0 u	11.0 u	NC	5.0
		Antimony, Leachate	8.5 u	8.5 u	NC	5.0
		Selenium, TCLP Leachate	15.5 u	15.5 u	NC	5.0

Lionville Lababoratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/12/01

CLIENT: TNUHANFORD B99-029 H1247 LVL LOT #: 0102L970

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	01L0091-LC1	Silver, LCS	507	500	UG/L	101.4
		Arsenic, LCS	9690	10000	UG/L	96.9
		Barium, LCS	4990	5000	UG/L	99.9
		Beryllium, LCS	251	250	UG/L	100.4
		Cadmium, LCS	252	250	UG/L	100.6
		Chromium, LCS	506	500	UG/L	101.3
		Nickel, LCS	2010	2000	UG/L	100.5
		Lead, LCS	2490	2500	UG/L	99.6
		Antimony, LCS	2970	3000	UG/L	99.1
		Selenium, LCS	9590	10000	UG/L	95.9

RECRA LabNet Use Only

01021970

Custody Transfer Record/Lab Work Request

Page 1 of 1

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: DOE Hanford B99-029
Est. Final Proj. Sampling Date:
Project #: 1/2643-1606-001:9999-00
Project Contact/Phone #:
RECRA Project Manager: DS
QC: Spk Del: Std TAT: 30 day

Date Rec'd: 2-9-01 Date Due: 3-11-01
Account #:

		A	B				C	D							
Refrigerator #		1	6				6	6							
#/Type Container	Liquid														
	Solid	1Pg	1Pg				1Pg	1Pg							
Volume	Liquid														
	Solid	250	250				250	500							
Preservatives		-	-				-	-							
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb					INORG: Metal	CN					
	RECRA LabNet Use Only														
		OLC24X	OLC25X				ICP03	ITCLP	Met(1)						

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	OLC24X	OLC25X				ICP03	ITCLP	Met(1)						
001	B11CH7			SO	2-7-01	1015	✓	✓				✓	✓							
002	8			⊥	⊥	1036	✓	✓				✓	✓							
003	7 tclp of 001			L	*	-								✓						
004	⊥ 8 ⊥ 002			⊥	⊥									✓						

Special Instructions: SAF B99-029

Run Matrix QC

DATE/REVISIONS:

* 1. See lab chron

Met(1) 2. As, Ba, Cd, Cr, Pb, Se, Ag, Sb, Be, Ni

3.

4.

5.

6.

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # See below
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 3 C

Relinquished by	Received by	Date	Time
FedEx	TKoppel	2-9-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 2258

13

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-029-70	Page 1 of 1
Collector: Fahlberg/Watson	Company Contact: T Pickett	Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100 KR4		SAF No.: B99-029	Air Quality ☐
Ice Chest No.: ERC 99-023 (10fl)	Field Logbook No.: EL 1517-1	COA: R10KR4C560	Method of Shipment: ~~Government Vehicle~~ RF. 2.7.01 Fed Ex	Data Turnaround: 45 Days
Shipped To: TMA/ECRA	Offsite Property No.: ~~NA~~ RF 2.7.01 A01095		Bill of Lading/Air Bill No.: ~~NA~~ RF 2.7.01 42357954-2250	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment.

SAMPLE ANALYSIS

Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	sG	sG	sG	sG	sG	sG	sG	sG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		
	Isotopic Uranium	Strontium-89,90 -- Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions		
Sample No.	Matrix *	Sample Date	Sample Time										
B11CH7	OTHER SOLID	2/7/01	1015					X	X	X	X		
B11CH8	OTHER SOLID	2/7/01	1030					X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
DJ WATSON/	02-07-01/1155	RF. 2B	02-07-01/1155
Relinquished By: Removed from RF 2B 3728	Date/Time: 0900 2.8.01	Received By: R.J. R. Thoren	Date/Time: 0900 2.8.01
Relinquished By: R.J. R. Thoren	Date/Time: 0900 2.8.01	Received By: FEDEX	Date/Time
Relinquished By: FedEx	Date/Time: 2.9.01 0945	Received By: Tkeppel	Date/Time: 2.9.01 0945
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) (Chloroform, Methylenechloride); VOA - 8260A (Add-On) (Trichloromonofluoromethane)
(2) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP (TCLP) Add-on - 1311/6010 (Antimony, Beryllium, Nickel)

Samples stored in Ref. 2B at the 3728 Shipping Facility on 2/7/01. Collector not available to relinquish samples on 2/8/01 for shipment.
2.8.01

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 B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11CH7	001	SO	01LE0156	02/07/01	02/13/01	02/28/01
B11CH8	002	SO	01LE0156	02/07/01	02/13/01	02/28/01
B11CH8	002 MS	SO	01LE0156	02/07/01	02/13/01	02/28/01
B11CH8	002 MSD	SO	01LE0156	02/07/01	02/13/01	02/28/01
LAB QC:						
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.

Client: TNU-HANFORD B99-029
RFW #: 0102L970
SDG/SAF #: H1247/B99-029

W.O. #: 11343-606-001-9999-00
Date Received: 02-09-2001

SEMIVOLATILE

Two (2) solid samples were collected on 02-07-2001.

The samples and their associated QC samples were extracted on 02-13-2001 and analyzed according to criteria set forth in Lionville laboratory OPs based on SW 846 Method 8270C for client specified Semivolatile target compound Bis(2-Ethylhexyl)phthalate on 02-20,28-2001.

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. Samples were extracted and analyzed within required holding times.

3. All surrogate recoveries were within EPA QC limits.

4. All matrix spike recoveries were within EPA QC limits.

   All blank spike recoveries were within EPA QC limits.

   The target compound is not included in the spiking solution. (CLP spike recoveries have been reported on the Form 3.)

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

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

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

Stephen D. Wesson
Laboratory Manager
Lionville Laboratory Incorporated

03-23-01
Date

som\gorup\data\bna\tnu-hanford-0102-970.doc

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

012
wk
3-23-01

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, Special List

Report Date: 03/01/01 10:27

RFW Batch Number: **0102L970** Client: **TNU-HANFORD B99-029** Work Order: 11343606001 Page: 1a

	Cust ID:	B11CH7		B11CH8		B11CH8		B11CH8		SBLKQQ		SBLKQQ BS	
Sample Information	RFW#:	001		002		002 MS		002 MSD		01LE0156-MB1		01LE0156-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOLID		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	71	%	61	%	67	%	62	%	77	%	75	%
	2-Fluorobiphenyl	63	%	53	%	61	%	59	%	77	%	79	%
	p-Terphenyl-d14	101	%	97	%	94	%	87	%	113	%	106	%
bis(2-Ethylhexyl)phthalate		740	U	740	U	720	U	710	U	330	U	86	J

	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	%
	p-Terphenyl-d14	101	%
bis(2-Ethylhexyl)phthalate		330	U

*= Outside of EPA CLP QC limits.

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Lionville Labs, Inc. Contract: 1343-06-01

Case No.: TNU-HANFORD B99-029 RFW Lot No.: 0102L970-002

MATRIX Spike - Sample No.: B11CH8 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	MS CONCENTRATION UG/KG	MS % REC #	QC LIMITS REC
1,4-Dichlorobenzene	3600	0	2070	57	28 -104
N-Nitroso-Di-n-propylamine	3600	0	2640	73	41 -126
1,2,4-Trichlorobenzene	3600	0	2220	62	38 -107
Acenaphthene	3600	0	2400	67	31 -137
2,4-Dinitrotoluene	3600	0	2820	78	28 -89
Pyrene	3600	0	2710	75	35 -142

COMPOUND	SPIKE ADDED UG/KG	MSD CONCENTRATION UG/KG	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,4-Dichlorobenzene	3550	1790	51	11	27	28 -104
N-Nitroso-Di-n-propylamine	3550	2230	63	14	38	41 -126
1,2,4-Trichlorobenzene	3550	2000	56	10	23	38 -107
Acenaphthene	3550	2190	62	7	19	31 -137
2,4-Dinitrotoluene	3550	2480	70	10	47	28 -89
Pyrene	3550	2390	67	11	36	35 -142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

3D

SOIL SEMIVOLATILE BLANK SPIKE/BLANK SPIKE DUPLICATE RECOVERY

Lab Name: Lionville Labs, Inc. Contract: 1343-06-01

Case No.: TNU-HANFORD B99-029 RFW Lot No.: 0102L970

BLANK Spike - Sample No.: SBLKOOLE0156-MB1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED UG/KG	SAMPLE CONCENTRATION UG/KG	BS CONCENTRATION UG/KG	BS % REC #	QC LIMITS REC
1,4-Dichlorobenzene	1670	0	1050	63	28 -104
N-Nitroso-Di-n-propylamine	1670	0	1320	79	41 -126
1,2,4-Trichlorobenzene	1670	0	1250	75	38 -107
Acenaphthene	1670	0	1160	70	31 -137
2,4-Dinitrotoluene	1670	0	1290	77	28 -89
Pyrene	1670	0	1620	97	35 -142

COMPOUND	SPIKE ADDED UG/KG	BSD CONCENTRATION UG/KG	BSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,4-Dichlorobenzene	1670	1010	61	3	27	28 -104
N-Nitroso-Di-n-propylamine	1670	1110	67	16	38	41 -126
1,2,4-Trichlorobenzene	1670	1160	70	6	23	38 -107
Acenaphthene	1670	1140	69	1	19	31 -137
2,4-Dinitrotoluene	1670	1240	74	4	47	28 -89
Pyrene	1670	1550	93	4	36	35 -142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

RECRA LabNet Use Only

0102L97D

Custody Transfer Record/Lab Work Request

Page 1 of 1

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TMU- Hanford B99-029

Est. Final Proj. Sampling Date:

Project #: 11343-(000-001-9999-00)

Project Contact/Phone #:

RECRA Project Manager: OS

QC: Spec Del: Std TAT: 30 day

Date Rec'd: 2-9-01 Date Due: 3-11-01

Account #:

		A	B				C	D							
Refrigerator #		1	6				6	6							
#/Type Container	Liquid														
	Solid	1Ag	1Ag				1Ag	1Ag							
Volume	Liquid														
	Solid	250	250				250	500							
Preservatives		-	-				-	-	-						
ANALYSES REQUESTED		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb				Metal	CN					
		RECRA LabNet Use Only													
		OLC24X	OLC25X				ICP03	ITCLP	Met(1)						

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	OLC24X	OLC25X				ICP03	ITCLP	Met(1)						
001	B11CH7			SO	2-7-01	1015	✓	✓				✓	✓							
002	8			1	1	1030	✓	✓				✓	✓							
003	7 tclp of 001			L	*	-								✓						
004	8 1 002			1	1									✓						

Special Instructions: SAF B99-029

Run Matrix QC

DATE/REVISIONS:

* 1. See lab chron

Met(1) 2. As, Ba, Cd, Cr, Pb, Se, Ag, Sb, Be, Ni

3.

4.

5.

6.

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # See below
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. 3 °C

Relinquished by	Received by	Date	Time
FedEx	TKoppel	2-9-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL		

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

NOTES:

4235 7954 2258

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-029-70	Page 1 of 1
Collector: Fahlberg/Watson	Company Contact: T Picken; Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N; Data Turnaround: 45 Days
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100 KR4	SAF No.: B99-029	Air Quality:
Ice Chest No.: ERC 99-023 (1 of 1)	Field Logbook No.: EL 1517-1; COA: R10KR4C560	Method of Shipment: ~~Government Vehicle~~ RF. 2-7-01 Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: ~~NA~~ RF 2-7-01 A01095	Bill of Lading/Air Bill No.: ~~NA~~ RF 2-7-01 42357954-2250	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage
** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment.

SAMPLE ANALYSIS

	Preservation	Type of Container	No. of Container(s)	Volume	Isotopic Uranium	Strontium-89,90 -- Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) [Bis(2-ethylhexyl) phthalate]	See item (1) in Special Instructions	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions
	None	aG	1	60mL								
	None	aG	1	60mL								
	None	aG	1	60mL								
	None	aG	1	120mL								
	Cool 4C	aG	1	250mL								
	Cool 4C	aG	1	250mL								
	None	aG	1	250mL								
	None	aG	1	500mL								

Deleted RF 2-7-01

Sample No.	Matrix *	Sample Date	Sample Time										
B11CH7	OTHER SOLID	2/7/01	1015					X	X	X	X		
B11CH8	OTHER SOLID	2/7/01	1030					X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
DJWATSON/	02-07-01/1155	RF. 2B	02-07-01/1155
Removed from RF 2B 3728	2-8-01 0400	R. Thoren	2-8-01 0400
R. Thoren	2-8-01 0400	FEDEX	
FedEx	2-9-01 0945	Trepel	2-9-01 0945

RT 3D

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) [Chloroform, Methylenechloride]; VOA - 8260A (Add-On) [Trichloromonofluoromethane]
(2) Metals by ICP (TCLP) - 1311/6010 [Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver]; Metals by ICP (TCLP) Add-on - 1311/6010 [Antimony, Beryllium, Nickel]

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 2/7/01. Collector not available to relinquish samples on 2/8/01 for shipment.

RT 2-8-01

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.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-029 H1247

DATE RECEIVED: 02/09/01 LVL LOT # :0102L970

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B11CH7	001	SO	01LVH046	02/07/01	N/A	02/15/01
B11CH8	002	SO	01LVH046	02/07/01	N/A	02/15/01
B11CH8	002 MS	SO	01LVH046	02/07/01	N/A	02/15/01
B11CH8	002 MSD	SO	01LVH046	02/07/01	N/A	02/15/01
LAB QC:						
VBLKPD	MB1	S	01LVH046	N/A	N/A	02/15/01
VBLKPD	MB1 BS	S	01LVH046	N/A	N/A	02/15/01

MAR 2001
RECEIVED

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B99-029
RFW #: 0102L970
SDG/SAF #: H1247/B99-029

W.O. #: 11343-606-001-9999-00
Date Received: 02-09-2001

GC/MS VOLATILE

Two (2) solid samples were collected on 02-07-2001.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compounds on 02-15-2001.

The following is a summary of the QC results accompanying these 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. Samples were analyzed within required holding time.

3. Three (3) of eighteen (18) surrogate recoveries were outside EPA QC limits. The analysis of sample fulfills the reanalysis requirement of its associated matrix spike samples. The sample matrix for B11CH7 is amber pellets, which historically has biased surrogate recoveries. Consequently, sample was not reanalyzed.

4. One (1) of ten (10) matrix spike recoveries was outside EPA QC limits.

5. All blank spike recoveries were within EPA QC limits.

6. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 2x the CRQL.

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

8. "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."

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

Stephen D. Wesson
Laboratory Manager
Lionville Laboratory Incorporated

03-23-01
Date

som\group\data\voa\tnu-hanford-0102-970.doc

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

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

GLOSSARY OF VOA 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.
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.voa

GLOSSARY OF VOA 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.voa

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List

Report Date: 03/07/01 12:48

RFW Batch Number: **0102L970** Client: **TNU-HANFORD B99-029** Work Order: 11343606001 Page: 1a

	Cust ID:	B11CH7	B11CH8	B11CH8	B11CH8	VBLKPD	VBLKPD BS
Sample Information	RFW#:	001	002	002 MS	002 MSD	01LVH046-MB1	01LVH046-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.09	1.06	1.06	1.04	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	1,2-Dichloroethane-d4	104 %	94 %	103 %	100 %	99 %	97 %
	Toluene-d8	144 * %	139 %	144 * %	142 * %	107 %	98 %
	Bromofluorobenzene	83 %	75 %	80 %	74 %	101 %	96 %
		fl	fl	fl	fl	fl	fl
Trichlorofluoromethane		12 U	2 J	2 J	3 J	5 U	5 U
Methylene Chloride		37 B	61 B	62 B	66 B	8	11 B
Chloroform		4 J	4 J	4 J	4 J	5 U	5 U

*= Outside of EPA CLP QC limits.

RECRA LabNet Use Only
0102L97O

Custody Transfer Record/Lab Work Request

Page 1 of 1

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: THU- Hanford B99-029
Est. Final Proj. Sampling Date:
Project #: 11343-(ooo-001-9999-0)
Project Contact/Phone #:
RECRA Project Manager: QS
QC: Spec Del: Std TAT: 30 day
Date Rec'd: 2-9-01 Date Due: 3-11-01
Account #:

		A	B				C	D							
Refrigerator #		1	6				6	6							
#/Type Container	Liquid														
	Solid	1AG	1AG				1AG	1AG							
Volume	Liquid														
	Solid	250	250				250	500							
Preservatives		-	-				-	-							
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb					INORG: Metal	CN					
RECRA LabNet Use Only		OLC24X	OLC25X				ICP03	ITCLP	Met(1)						

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	OLC24X	OLC25X				ICP03	ITCLP	Met(1)						
001	B11CH7			SO	2-7-01	1015	✓	✓				✓	✓							
002	8			L	L	1030	✓	✓				✓	✓							
003	7 tclp of 001			L	*	-								✓						
004	8 L 002			L	L	-								✓						

Special Instructions: SaF B99-029
Run Matrix QC

DATE/REVISIONS:
* 1. See lab chron
Met(1) 2. As, Ba, Cd, Cr, Pb, Se, Ag, Sb, Br, Ni
3.
4.
5.
6.

RECRA LabNet Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ___
Airbill # See below
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. 3 °C

Relinquished by	Received by	Date	Time
FedEx	TBoppel	2-9-01	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL DRUM		

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:
4235 7954 2250

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-029-70	Page 1 of 1

Collector: Fahlberg/Watson	Company Contact: T Pickett — Telephone No.: 373-4630	Project Coordinator: TRENT, SJ	Price Code: 9N — Data Turnaround: 45 Days
Project Designation: 100-KR-4 Pump & Treat - Resin Sampling	Sampling Location: 100 KR4	SAF No.: B99-029	Air Quality ☐
Ice Chest No.: ERC99-023 (10fl)	Field Logbook No.: EL 1517-1 — COA: R10KR4C560	Method of Shipment: ~~Government Vehicle~~ Ref. 2-7-01 Fed Ex	
Shipped To: TMA/RECRA	Offsite Property No.: ~~NA~~ Ref 2-7-01 A01095	Bill of Lading/Air Bill No.: ~~NA~~ Ref 2-7-01 42357954-2250	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

** Historical data indicates that samples are less than 2000 pCi/g total activity and therefore do not require a RCF rad screen for off-site shipment.

SAMPLE ANALYSIS	Isotopic Uranium	Strontium-89,90 – Total Sr	Technetium-99	Tritium - H3	Semi-VOA - 8270A (TCL) (Bis(2-ethylhexyl) phthalate)	See item (1) in Special Instructions.	IC Anions - 300.0 (Nitrate)	See item (2) in Special Instructions.		
Preservation	None	None	None	None	Cool 4C	Cool 4C	None	None		
Type of Container	sG	sG	sG	sG	sG	sG	sG	sG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	60mL	120mL	250mL	250mL	250mL	500mL		

Sample No.	Matrix *	Sample Date	Sample Time										
B11CH7	OTHER SOLID	2/7/01	1015					X	X	X	X		
B11CH8	OTHER SOLID	2/7/01	1030					X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
DJWATSON/[illegible]	02-07-01/1155	Ref. 2B	02-07-01/1155
Removed from Ref 2B 3728	2.8.01 0900	R.T. R. Thoren	2.8.01 0900
R.T. R. Thoren	2.8.01 0900	FEDEX	
FedEx	2.9.01 0945	[illegible]	2.9.01 0945

SPECIAL INSTRUCTIONS

(1) VOA - 8260A (TCL) (Chloroform, Methylenechloride); VOA - 8260A (Add-On) (Trichloromonofluoromethane)
(2) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP (TCLP) Add-on - 1311/6010 (Antimony, Beryllium, Nickel)

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 2/7/01. Collector not available to relinquish samples on 2/8/01 for shipment.

RT 2.8.01

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)