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1.0 GENERAL

Bechtel Hanford Inc. Sample Delivery Group H0506 is composed of eight solid (soil) samples designated under SAF No. B99-078 with a Project Designation of: 200 Area Source characterization-200-CW-1 OU.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the TNU Sample Receipt Checklists. The results were transmitted to BHI via facsimile on October 11, 1999 with the exception of Neptunium-237 and Technetium-99, which were transmitted to BHI on October 12, 1999.

2.0 ANALYSIS NOTES

2.1 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.2 Total and Isotopic Uranium Analyses

Isotopic analyses were to be based on the results from the total uranium analyses. Isotopic Uranium was requested on sample B0W694. No problems were encountered during the course of the analyses.

2.3 Gamma Spec Analyses

No problems were encountered during the course of the analyses though a recount was performed for sample B0W693.

2.4 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses. A recount was performed on sample B0W692.

2.5 Americium-241 Analyses

Samples B0W692 and B0W6B0 had low chemical yields after the initial analysis. The yields were acceptable after the samples were reanalyzed. The reanalysis data is reported for samples B0W692 and B0W6B0. No other problems were encountered during the course of the analyses.

2.6 Tritium Analyses

No problems were encountered during the course of the analyses.

2.7 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.8 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

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2.9 Isotopic Thorium Analyses

No problems were encountered during the course of the analyses.

2.10 Neptunium-237 Analyses

No problems were encountered during the course of the analyses. The tracer yield of the duplicate analysis was 11%, however the data for the sample was in agreement with the original analysis.

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SAMPLE DELIVERY GROUP H0506

SAMPLE SUMMARY

SDG 7188
Contact Kevin C. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B0W692	GP-2<15'bgs 10'-11'	SOLID		N908160-01	B99-078	B99-078-79	08/25/99 08:45
B0W693	GP-2<15'bgs 12.5-13.5	SOLID		N908160-02	B99-078	B99-078-80	08/25/99 09:09
B0W694	GP-2<15'bgs 14'-15'	SOLID		N908160-03	B99-078	B99-078-81	08/25/99 09:26
B0W697	GP-2<15'bgs 15'-16'	SOLID		N908160-04	B99-078	B99-078-84	08/25/99 10:04
B0W698	GP-2<15'bgs 17.5'-18.5'	SOLID		N908160-05	B99-078	B99-078-85	08/25/99 10:32
B0W699	GP-2<15'bgs 20'-21'	SOLID		N908160-06	B99-078	B99-078-86	08/25/99 10:51
B0W6B0	GP-2<15'bgs 22'-23'	SOLID		N908160-07	B99-078	B99-078-87	08/25/99 11:03
B0W6B1	GP-2<15'bgs 24'-25'	SOLID		N908160-08	B99-078	B99-078-88	08/25/99 11:18
Method Blank		SOLID		N908160-10	B99-078		
Method Blank		SOLID		N909019-09	B99-078		
Lab Control Sample		SOLID		N908160-09	B99-078		
Lab Control Sample		SOLID		N909019-08	B99-078		
Duplicate (N908160-01)	GP-2<15'bgs 10'-11'	SOLID		N908160-11	B99-078		08/25/99 08:45
Duplicate (N908160-01)	GP-2<15'bgs 10'-11'	SOLID		N908160-15	B99-078		08/25/99 08:45
Duplicate (N908160-03)	GP-2<15'bgs 14'-15'	SOLID		N908160-13	B99-078		08/25/99 09:26
Duplicate (N908160-04)	GP-2<15'bgs 15'-16'	SOLID		N908160-12	B99-078		08/25/99 10:04

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CS
Version 3.06
Report date 11/02/99

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SAMPLE DELIVERY GROUP H0506

QC SUMMARY

SDG 7188
Contact Kevin C. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

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
7188	B99-078-79	B0W692	SOLID	87.7			08/27/99	2	N908160-01	7188-001
	B99-078-80	B0W693	SOLID	89.0			08/27/99	2	N908160-02	7188-002
	B99-078-81	B0W694	SOLID	70.0			08/27/99	2	N908160-03	7188-003
	B99-078-84	B0W697	SOLID	93.2			08/27/99	2	N908160-04	7188-004
	B99-078-85	B0W698	SOLID	96.2			08/27/99	2	N908160-05	7188-005
	B99-078-86	B0W699	SOLID	95.6			08/27/99	2	N908160-06	7188-006
	B99-078-87	B0W6B0	SOLID	96.7			08/27/99	2	N908160-07	7188-007
	B99-078-88	B0W6B1	SOLID	96.1			08/27/99	2	N908160-08	7188-008
		Method Blank	SOLID						N908160-10	7188-010
		Lab Control Sample	SOLID						N908160-09	7188-009
		Duplicate (N908160-01)	SOLID	87.7			08/27/99	2	N908160-11	7188-011
		Duplicate (N908160-01)	SOLID				08/27/99	2	N908160-15	7188-015
		Duplicate (N908160-03)	SOLID	70.0			08/27/99	2	N908160-13	7188-013
		Duplicate (N908160-04)	SOLID	93.2			08/27/99	2	N908160-12	7188-012
7191		Method Blank	SOLID						N909019-09	7191-009
		Lab Control Sample	SOLID						N909019-08	7191-008

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SAMPLE DELIVERY GROUP H0506

SDG 7188
Contact Kevin C. Johnson

PREP BATCH SUMMARY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Soil	6893-125	5.0	6			1	1	1/0		
			6893-126	5.0	2					1/1		
NP	SOLID	Neptunium in Soil	6893-125	5.0	8			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6893-125	5.0	8			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Soil	6893-125	5.0	8			1	1	1/1		
U	SOLID	Uranium, Isotopic in Soil	6893-125	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	6893-125	10.0	8			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	6893-125	10.0	5			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6893-125	15.0	8			1	1	1/1		
Kinetic Phosphorimetry												
U_T	SOLID	Uranium, Total in Soil	6893-125	9.0	8			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	6893-125	10.0	5			1	1	1/1		
NI_L	SOLID	Nickel 63 in Soil	6893-125	10.0	5			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
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Form DVD-PBS
Version 3.06
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SAMPLE DELIVERY GROUP H0506

WORK SUMMARY

SDG 7188
Contact Kevin C. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0W692			N908160-01	7188-001	AM	A1	10/16/99	10/19/99	NJV	Americium 241 in Soil
GP-2<15'bgs 10'-11'		SOLID	08/25/99	7188-001	GAM		09/30/99	10/11/99	NJV	Gamma Scan
B99-078-79	B99-078		08/27/99	7188-001	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-001	PU		10/10/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-001	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-001	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-001	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
B0W693			N908160-02	7188-002	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 12.5-13.5		SOLID	08/25/99	7188-002	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-80	B99-078		08/27/99	7188-002	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-002	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-002	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-002	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-002	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
B0W694			N908160-03	7188-003	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 14'-15'		SOLID	08/25/99	7188-003	GAM		09/30/99	10/11/99	NJV	Gamma Scan
B99-078-81	B99-078		08/27/99	7188-003	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-003	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-003	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-003	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-003	U		10/07/99	10/11/99	NJV	Uranium, Isotopic in Soil
				7188-003	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
B0W697			N908160-04	7188-004	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 15'-16'		SOLID	08/25/99	7188-004	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-84	B99-078		08/27/99	7188-004	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-004	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
				7188-004	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-004	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-004	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-004	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil
				7188-004	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-004	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil

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SAMPLE DELIVERY GROUP H0506

SDG 7188
Contact Kevin C. Johnson

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0W698			N908160-05	7188-005	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 17.5'-18.5'		SOLID	08/25/99	7188-005	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-85	B99-078		08/27/99	7188-005	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-005	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
				7188-005	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-005	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-005	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-005	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil
				7188-005	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-005	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
B0W699			N908160-06	7188-006	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 20'-21'		SOLID	08/25/99	7188-006	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-86	B99-078		08/27/99	7188-006	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-006	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
				7188-006	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-006	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-006	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-006	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil
				7188-006	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-006	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
B0W6B0			N908160-07	7188-007	AM	A1	10/16/99	10/19/99	NJV	Americium 241 in Soil
GP-2<15'bgs 22'-23'		SOLID	08/25/99	7188-007	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-87	B99-078		08/27/99	7188-007	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-007	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
				7188-007	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-007	PU		10/06/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-007	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-007	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil
				7188-007	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-007	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil

Lab id TMANC
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SAMPLE DELIVERY GROUP H0506

SDG 7188
Contact Kevin C. Johnson

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0W6B1			N908160-08	7188-008	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 24'-25'		SOLID	08/25/99	7188-008	GAM		10/05/99	10/11/99	NJV	Gamma Scan
B99-078-88	B99-078		08/27/99	7188-008	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-008	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
				7188-008	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-008	PU		10/08/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-008	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-008	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil
				7188-008	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-008	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
Method Blank			N908160-10	7188-010	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
		SOLID		7188-010	GAM		10/01/99	10/11/99	NJV	Gamma Scan
	B99-078			7188-010	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-010	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-010	PU		10/08/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-010	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-010	TH		10/10/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-010	U		10/07/99	10/11/99	NJV	Uranium, Isotopic in Soil
				7188-010	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
Method Blank			N909019-09	7191-009	NI_L		10/07/99	10/19/99	NJV	Nickel 63 in Soil
		SOLID		7191-009	TC		10/11/99	10/19/99	NJV	Technetium 99 in Soil
	B99-078									
Lab Control Sample			N908160-09	7188-009	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
		SOLID		7188-009	GAM		10/05/99	10/11/99	NJV	Gamma Scan
	B99-078			7188-009	H		10/11/99	10/11/99	NJV	Tritium in Soil
				7188-009	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-009	PU		10/08/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-009	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-009	TH		10/08/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-009	U		10/07/99	10/11/99	NJV	Uranium, Isotopic in Soil
				7188-009	U_T	A0R1	10/06/99	10/11/99	NJV	Uranium, Total in Soil
Lab Control Sample			N909019-08	7191-008	NI_L		10/07/99	10/19/99	NJV	Nickel 63 in Soil
		SOLID		7191-008	TC		10/11/99	10/19/99	NJV	Technetium 99 in Soil
	B99-078									

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SAMPLE DELIVERY GROUP H0506

SDG 7188
Contact Kevin C. Johnson

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Duplicate (N908160-01)			N908160-11	7188-011	AM		10/08/99	10/11/99	NJV	Americium 241 in Soil
GP-2<15'bgs 10'-11'		SOLID	08/25/99	7188-011	GAM		10/01/99	10/11/99	NJV	Gamma Scan
	B99-078		08/27/99	7188-011	NP		10/12/99	10/12/99	NJV	Neptunium in Soil
				7188-011	PU		10/08/99	10/11/99	NJV	Plutonium, Isotopic in Solids
				7188-011	SR		10/01/99	10/11/99	NJV	Total Strontium in Soil
				7188-011	TH		10/10/99	10/11/99	NJV	Thorium, Isotopic in Soil
				7188-011	U_T		10/02/99	10/11/99	NJV	Uranium, Total in Soil
Duplicate (N908160-01)			N908160-15	7188-015	AM		10/18/99	10/19/99	NJV	Americium 241 in Soil
GP-2<15'bgs 10'-11'		SOLID	08/25/99							
	B99-078		08/27/99							
Duplicate (N908160-03)			N908160-13	7188-013	U		10/07/99	10/11/99	NJV	Uranium, Isotopic in Soil
GP-2<15'bgs 14'-15'		SOLID	08/25/99							
	B99-078		08/27/99							
Duplicate (N908160-04)			N908160-12	7188-012	H		10/11/99	10/11/99	NJV	Tritium in Soil
GP-2<15'bgs 15'-16'		SOLID	08/25/99	7188-012	NI_L		10/07/99	10/11/99	NJV	Nickel 63 in Soil
	B99-078		08/27/99	7188-012	TC		10/11/99	10/12/99	NJV	Technetium 99 in Soil

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	B99-078	Americium 241 in Soil	AM/CMPLATE	8			1	1	2	12
GAM	B99-078	Gamma Scan	GAMMAHI	8			1	1	1	11
H	B99-078	Tritium in Soil	EPA906.0	5			1	1	1	8
NI_L	B99-078	Nickel 63 in Soil	NI63LSC	5			1	1	1	8
NP	B99-078	Neptunium in Soil	NP237PLATE	8			1	1	1	11
PU	B99-078	Plutonium, Isotopic in Solids	PUPLATE	8			1	1	1	11
SR	B99-078	Total Strontium in Soil	SRTOTAL	8			1	1	1	11
TC	B99-078	Technetium 99 in Soil	TC99TRLSC	5			1	1	1	8
TH	B99-078	Thorium, Isotopic in Soil	THPLATE	8			1	1	1	11
U	B99-078	Uranium, Isotopic in Soil	UPLATE	1			1	1	1	4
U_T	B99-078	Uranium, Total in Soil	UKPA	8			1	1	1	11
TOTALS				72			11	11	12	106

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CWS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-10 Method Blank

METHOD BLANK

SDG	7188	Client/Case no	Hanford	SDG-H0506	
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925		
Lab sample id	N908160-10	Client sample id	Method Blank		
Dept sample id	7188-010	Material/Matrix		SOLID	
		SAF No	B99-078		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.006	0.041	0.069	400	U	H
Neptunium 237	13994-20-2	0.003	0.012	0.023		U	NP
Uranium 233/234	U-233/234	0.013	0.013	0.021	1.0	U	U
Uranium 235	15117-96-1	-0.003	0.005	0.020	1.0	U	U
Uranium 238	U-238	0.002	0.009	0.021	1.0	U	U
Total Uranium (ug/g)	7440-61-1	-0.002	0.003	0.007	1.0	U	U_T
Plutonium 238	13981-16-3	-0.003	0.019	0.043	1.0	U	PU
Plutonium 239/240	PU-239/240	0.003	0.019	0.040	1.0	U	PU
Americium 241	14596-10-2	0	0.027	0.049	1.0	U	AM
Total Strontium	SR-RAD	-0.111	0.17	0.23	1.0	U	SR
Thorium 228	14274-82-9	0.065	0.081	0.14	1.0	U	TH
Thorium 230	14269-63-7	U		0.14	1.0	U	TH
Thorium 232	TH-232	0.032	0.032	0.062	1.0	U	TH
Potassium 40	13966-00-2	U		0.20		U	GAM
Cobalt 60	10198-40-0	U		0.008	0.050	U	GAM
Cesium 137	10045-97-3	U		0.009	0.10	U	GAM
Europium 152	14683-23-9	U		0.022	0.10	U	GAM
Europium 154	15585-10-1	U		0.021	0.10	U	GAM
Europium 155	14391-16-3	U		0.028	0.10	U	GAM
Radium 226	13982-63-3	U		0.016	0.10	U	GAM
Radium 228	15262-20-1	U		0.040	0.20	U	GAM
Thorium 228	14274-82-9	U		0.013		U	GAM
Thorium 232	TH-232	U		0.040		U	GAM
Americium 241	14596-10-2	U		0.064		U	GAM
Uranium 238	U-238	U		0.94		U	GAM
Uranium 235	15117-96-1	U		0.037		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

BLANK, cont.

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-10	Client sample id	Method Blank
Dept sample id	7188-010	Material/Matrix	SOLID
		SAF No	B99-078

QC-BLANK 31767

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N909019-09 Method Blank

METHOD BLANK

SDG	7188	Client/Case no	Hanford		SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925		
Lab sample id	N909019-09	Client sample id	Method Blank		
Dept sample id	7191-009	Material/Matrix			SOLID
		SAF No	B99-078		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Technetium 99	14133-76-7	0.243	0.66	0.30	15	U	TC
Total Uranium (ug/g)	7440-61-1	N.A.			1.0		U_T
Plutonium 238	13981-16-3	N.A.			1.0		PU
Plutonium 239/240	PU-239/240	N.A.			1.0		PU
Nickel 63	13981-37-8	-2.71	1.5	2.6	30	U	NI_L
Americium 241	14596-10-2	N.A.			1.0		AM
Total Strontium	SR-RAD	N.A.			1.0		SR
Thorium 228	14274-82-9	N.A.			1.0		TH
Thorium 230	14269-63-7	N.A.			1.0		TH
Thorium 232	TH-232	N.A.			1.0		TH
Potassium 40	13966-00-2	N.A.					GAM
Cobalt 60	10198-40-0	N.A.			0.050		GAM
Cesium 137	10045-97-3	N.A.			0.10		GAM
Europium 152	14683-23-9	N.A.			0.10		GAM
Europium 154	15585-10-1	N.A.			0.10		GAM
Europium 155	14391-16-3	N.A.			0.10		GAM
Radium 226	13982-63-3	N.A.			0.10		GAM
Radium 228	15262-20-1	N.A.			0.20		GAM
Thorium 228	14274-82-9	N.A.					GAM
Thorium 232	TH-232	N.A.					GAM
Americium 241	14596-10-2	N.A.					GAM
Uranium 238	U-238	N.A.					GAM
Uranium 235	15117-96-1	N.A.					GAM

200 Area source chctzn-200-CW-1 OU

QC-BLANK 31857

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-09 Lab Control Sample

LAB CONTROL SAMPLE

SDG 7188 Client/Case no Hanfcrd SDG-H0506

Contact Kevin C. Johnson Case no TRB-SBB-207925

Lab sample id N908160-09 Client sample id Lab Control Sample

Dept sample id 7188-009 Material/Matrix SOLID

SAF No B99-078

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	5.94	0.13	0.069	400	J	H	6.03	0.24	99	84-116	80-120
Neptunium 237	2.43	0.17	0.027			NP	2.64	0.11	92	87-113	
Uranium 233/234	4.61	0.27	0.13	1.0		U	4.83	0.19	95	88-112	80-120
Uranium 235	4.03	0.25	0.017	1.0		U	3.92	0.16	103	86-114	80-120
Uranium 238	5.07	0.29	0.12	1.0		U	5.24	0.21	97	87-113	80-120
Total Uranium (ug/g)	41.4	12	0.072	1.0		U_T	41.2	1.6	100	54-146	80-120
Plutonium 238	11.9	0.78	0.029	1.0		PU	12.5	0.50	95	87-113	80-120
Plutonium 239/240	12.4	0.81	0.033	1.0		PU	13.2	0.53	94	87-113	80-120
Americium 241	9.13	0.64	0.056	1.0		AM	9.58	0.38	95	86-114	80-120
Total Strontium	14.4	0.89	0.60	1.0		SR	12.5	0.50	115	79-121	
Thorium 230	22.4	1.6	0.20	1.0		TH	22.4	0.90	100	86-114	
Cobalt 60	0.429	0.046	0.022	0.050		GAM	0.380	0.015	113	68-132	80-120
Cesium 137	0.414	0.038	0.024	0.10		GAM	0.374	0.015	111	70-130	80-120

200 Area source chctzn-200-CW-1 OU

QC-LCS 31766

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N909019-08

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Case no	TRB-SBB-207925
Lab sample id	N909019-08	Client sample id	Lab Control Sample
Dept sample id	7191-008	Material/Matrix	SOLID
		SAF No	B99-078

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
Technetium 99	45.5	0.74	0.23	15		TC	48.0	1.9	95	84-116	80-120
Total Uranium (ug/g)	N.A.			1.0		U_T					80-120
Plutonium 238	N.A.			1.0		PU					80-120
Plutonium 239/240	N.A.			1.0		PU					80-120
Nickel 63	170	4.0	2.5	30		NI_L	167	6.7	102	83-117	
Americium 241	N.A.			1.0		AM					80-120
Total Strontium	N.A.			1.0		SR					
Thorium 230	N.A.			1.0		TH					
Cobalt 60	N.A.			0.050		GAM					80-120
Cesium 137	N.A.			0.10		GAM					80-120

200 Area source chctzn-200-CW-1 OU

QC-LCS 31856

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-11 B0W692

DUPLICATE

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Case no	TRB-SBB-207925
DUPLICATE		ORIGINAL	
Lab sample id	N908160-11	Lab sample id	N908160-01
Dept sample id	7188-011	Dept sample id	7188-001
		Received	08/27/99
% solids	87.7	% solids	87.7
Client sample id	B0W692		
Location/Matrix	GP-2<15'bgs 10'-11' SOLID		
Collected	08/25/99 08:45		
Custody/SAF No	B99-078-79 B99-078		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Neptunium 237	0.010	0.061	0.14		U	NP	-0.002	0.003	0.012	U	-	
Total Uranium (ug/g)	0.800	0.099	0.007	1.0	J	U_T	0.916	0.11	0.007	J	14	32
Plutonium 238	-0.021	0.021	0.056	1.0	U	PU	0.005	0.015	0.027	U	-	
Plutonium 239/240	0.165	0.049	0.042	1.0	J	PU	0.181	0.045	0.033	J	9	59
Americium 241	0.294	0.064	0.034	1.0	J	AM	0.178	0.072	0.068	J	49	62
Total Strontium	2.90	0.27	0.21	1.0		SR	2.98	0.22	0.15		3	28
Thorium 228	0.271	0.079	0.080	1.0	J	TH	0.405	0.13	0.13	J	40	68
Thorium 230	0.241	0.11	0.16	1.0	J	TH	0.057	0.11	0.17	U	124	157
Thorium 232	0.172	0.069	0.054	1.0	J	TH	0.254	0.095	0.072	J	38	83
Potassium 40	10.3	0.89	0.48			GAM	10.5	1.3	0.83		2	39
Cobalt 60	U		0.052	0.050	U	GAM	U		0.090	U	-	
Cesium 137	622	1.3	0.38	0.10		GAM	632	1.7	0.41		2	32
Europium 152	U		1.2	0.10	U	GAM	U		1.6	U	-	
Europium 154	0.526	0.15	0.17	0.10		GAM	U		0.31	U	52	128
Europium 155	U		1.0	0.10	U	GAM	U		0.74	U	-	
Radium 226	0.557	0.40	0.58	0.10	U	GAM	0.645	0.47	0.62		15	157
Radium 228	0.802	0.25	0.26	0.20		GAM	0.507	0.29	0.31		45	94
Thorium 228	0.514	0.37	0.54		U	GAM	U		0.65	U	-	
Thorium 232	0.802	0.25	0.26			GAM	0.507	0.29	0.31		45	94
Americium 241	U		0.74		U	GAM	U		0.45	U	-	
Uranium 238	U		7.5		U	GAM	U		11	U	-	
Uranium 235	U		1.2		U	GAM	U		1.4	U	-	

200 Area source chctzn-200-CW-1 OU

QC-DUP#1 31768

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-15

B0W692

DUPLICATE

SDG	7188			Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson			Case no	TRB-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	N908160-15	Lab sample id	N908160-01	Client sample id	B0W692
Dept sample id	7188-015	Dept sample id	7188-001	Location/Matrix	GP-2<15'bgs 10'-11' SOLID
		Received	08/27/99	Collected	08/25/99 08:45
		% solids	87.7	Custody/SAF No	B99-078-79 B99-078

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
Americium 241	0.166	0.064	0.043	1.0	J	AM	0.178	0.072	0.068	J	7	85	

200 Area source chctzn-200-CW-1 OU

QC-DUP#1 32220

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-13

B0W694

DUPLICATE

SDG	7188			Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson			Case no	TRB-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	N908160-13	Lab sample id	N908160-03	Client sample id	B0W694
Dept sample id	7188-013	Dept sample id	7188-003	Location/Matrix	GP-2<15'bgs 14'-15' SOLID
		Received	08/27/99	Collected	08/25/99 09:26
% solids	70.0	% solids	70.0	Custody/SAF No	B99-078-81 B99-078

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
Uranium 233/234	0.867	0.089	0.028	1.0	J	U	0.858	0.093	0.025	J	1	25	
Uranium 235	0.056	0.024	0.018	1.0	J	U	0.067	0.025	0.019	J	18	85	
Uranium 238	0.777	0.084	0.024	1.0	J	U	0.733	0.084	0.023	J	6	26	

200 Area source chctzn-200-CW-1 OU

QC-DUP#3 31995

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-12

B0W697

DUPLICATE

SDG	7188			Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson			Case no	TRB-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	N908160-12	Lab sample id	N908160-04	Client sample id	B0W697
Dept sample id	7188-012	Dept sample id	7188-004	Location/Matrix	GP-2<15'bgs 15'-16' SOLID
		Received	08/27/99	Collected	08/25/99 10:04
% solids	93.2	% solids	93.2	Custody/SAF No	B99-078-84 B99-078

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	0.007	0.041	0.069	400	U	H	-0.001	0.041	0.069	U	-		
Technetium 99	0.065	0.16	0.45	15	U	TC	0.013	0.20	0.54	U	-		
Nickel 63	-2.88	2.2	3.8	30	U	NI_L	-5.33	2.8	5.0	U	-		

200 Area source chctzn-200-CW-1 OU

QC-DUP#4 31769

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-01 B0W692

DATA SHEET

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-01	Client sample id	B0W692
Dept sample id	7188-001	Location/Matrix	GP-2<15'bgs 10'-11' SOLID
Received	08/27/99	Collected	08/25/99 08:45
% solids	87.7	Custody/SAF No	B99-078-79 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Neptunium 237	13994-20-2	-0.002	0.003	0.012		U	NP
Total Uranium (ug/g)	7440-61-1	0.916	0.11	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	0.005	0.015	0.027	1.0	U	PU
Plutonium 239/240	PU-239/240	0.181	0.045	0.033	1.0	J	PU
Americium 241	14596-10-2	0.178	0.072	0.068	1.0	J	AM
Total Strontium	SR-RAD	2.98	0.22	0.15	1.0		SR
Thorium 228	14274-82-9	0.405	0.13	0.13	1.0	J	TH
Thorium 230	14269-63-7	0.057	0.11	0.17	1.0	U	TH
Thorium 232	TH-232	0.254	0.095	0.072	1.0	J	TH
Potassium 40	13966-00-2	10.5	1.3	0.83			GAM
Cobalt 60	10198-40-0	U		0.090	0.050	U	GAM
Cesium 137	10045-97-3	632	1.7	0.41	0.10		GAM
Europium 152	14683-23-9	U		1.6	0.10	U	GAM
Europium 154	15585-10-1	U		0.31	0.10	U	GAM
Europium 155	14391-16-3	U		0.74	0.10	U	GAM
Radium 226	13982-63-3	0.645	0.47	0.62	0.10		GAM
Radium 228	15262-20-1	0.507	0.29	0.31	0.20		GAM
Thorium 228	14274-82-9	U		0.65		U	GAM
Thorium 232	TH-232	0.507	0.29	0.31			GAM
Americium 241	14596-10-2	U		0.45		U	GAM
Uranium 238	U-238	U		11		U	GAM
Uranium 235	15117-96-1	U		1.4		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-02 B0W693

DATA SHEET

SDG	7188	Client/Case no	Hanford	SDG-H0506	
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925		
Lab sample id	N908160-02	Client sample id	B0W693		
Dept sample id	7188-002	Location/Matrix	GP-2<15'bgs 12.5-13.5	SOLID	
Received	08/27/99	Collected	08/25/99 09:09		
% solids	89.0	Custody/SAF No	B99-078-80	B99-078	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Neptunium 237	13994-20-2	0.003	0.006	0.015		U	NP
Total Uranium (ug/g)	7440-61-1	0.878	0.11	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	-0.005	0.022	0.052	1.0	U	PU
Plutonium 239/240	PU-239/240	0.065	0.044	0.052	1.0	J	PU
Americium 241	14596-10-2	0.170	0.060	0.050	1.0	J	AM
Total Strontium	SR-RAD	0.991	0.16	0.17	1.0	J	SR
Thorium 228	14274-82-9	0.353	0.27	0.36	1.0	U	TH
Thorium 230	14269-63-7	0.441	0.22	0.21	1.0	J	TH
Thorium 232	TH-232	0.265	0.18	0.17	1.0	J	TH
Potassium 40	13966-00-2	12.4	1.7	0.21			GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	592	0.60	0.10	0.10		GAM
Europium 152	14683-23-9	U		0.52	0.10	U	GAM
Europium 154	15585-10-1	0.454	0.085	0.095	0.10		GAM
Europium 155	14391-16-3	U		0.43	0.10	U	GAM
Radium 226	13982-63-3	U		0.22	0.10	U	GAM
Radium 228	15262-20-1	U		0.17	0.20	U	GAM
Thorium 228	14274-82-9	U		0.23		U	GAM
Thorium 232	TH-232	U		0.17		U	GAM
Americium 241	14596-10-2	0.190	0.086	0.14			GAM
Uranium 238	U-238	U		4.1		U	GAM
Uranium 235	15117-96-1	U		0.52		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-03 B0W694

DATA SHEET

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-03	Client sample id	B0W694
Dept sample id	7188-003	Location/Matrix	GP-2<15'bgs 14'-15' SOLID
Received	08/27/99	Collected	08/25/99 09:26
% solids	70.0	Custody/SAF No	B99-078-81 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Neptunium 237	13994-20-2	-0.002	0.010	0.023		U	NP
Uranium 233/234	U-233/234	0.858	0.093	0.025	1.0	J	U
Uranium 235	15117-96-1	0.067	0.025	0.019	1.0	J	U
Uranium 238	U-238	0.733	0.084	0.023	1.0	J	U
Total Uranium (ug/g)	7440-61-1	1.99	0.25	0.007	1.0		U_T
Plutonium 238	13981-16-3	0.033	0.025	0.039	1.0	U	PU
Plutonium 239/240	PU-239/240	1.14	0.16	0.031	1.0		PU
Americium 241	14596-10-2	1.28	0.16	0.039	1.0		AM
Total Strontium	SR-RAD	9.36	0.45	0.18	1.0		SR
Thorium 228	14274-82-9	0.246	0.14	0.18	1.0	J	TH
Thorium 230	14269-63-7	0.683	0.22	0.20	1.0	J	TH
Thorium 232	TH-232	0.150	0.11	0.13	1.0	J	TH
Potassium 40	13966-00-2	10.6	1.4	0.86			GAM
Cobalt 60	10198-40-0	U		0.086	0.050	U	GAM
Cesium 137	10045-97-3	7180	7.0	2.1	0.10		GAM
Europium 152	14683-23-9	U		6.0	0.10	U	GAM
Europium 154	15585-10-1	3.37	0.69	0.70	0.10		GAM
Europium 155	14391-16-3	U		3.8	0.10	U	GAM
Radium 226	13982-63-3	U		2.9	0.10	U	GAM
Radium 228	15262-20-1	U		1.2	0.20	U	GAM
Thorium 228	14274-82-9	2.67	1.8	2.6			GAM
Thorium 232	TH-232	U		1.2		U	GAM
Americium 241	14596-10-2	U		3.6		U	GAM
Uranium 238	U-238	U		35		U	GAM
Uranium 235	15117-96-1	U		5.5		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-04 B0W697

DATA SHEET

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-04	Client sample id	B0W697
Dept sample id	7188-004	Location/Matrix	GP-2<15'bgs 15'-16' SOLID
Received	08/27/99	Collected	08/25/99 10:04
% solids	93.2	Custody/SAF No	B99-078-84 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.001	0.041	0.069	400	U	H
Technetium 99	14133-76-7	0.013	0.20	0.54	15	U	TC
Neptunium 237	13994-20-2	-0.007	0.021	0.047		U	NP
Total Uranium (ug/g)	7440-61-1	0.890	0.11	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	-0.004	0.015	0.035	1.0	U	PU
Plutonium 239/240	PU-239/240	0.037	0.030	0.049	1.0	U	PU
Nickel 63	13981-37-8	-5.33	2.8	5.0	30	U	NI_L
Americium 241	14596-10-2	0.077	0.041	0.039	1.0	J	AM
Total Strontium	SR-RAD	4.77	0.29	0.16	1.0		SR
Thorium 228	14274-82-9	0.326	0.19	0.26	1.0	J	TH
Thorium 230	14269-63-7	0.170	0.19	0.24	1.0	U	TH
Thorium 232	TH-232	0.465	0.19	0.17	1.0	J	TH
Potassium 40	13966-00-2	11.0	0.86	0.39			GAM
Cobalt 60	10198-40-0	U		0.052	0.050	U	GAM
Cesium 137	10045-97-3	143	0.60	0.16	0.10		GAM
Europium 152	14683-23-9	U		0.62	0.10	U	GAM
Europium 154	15585-10-1	U		0.19	0.10	U	GAM
Europium 155	14391-16-3	U		0.35	0.10	U	GAM
Radium 226	13982-63-3	0.528	0.24	0.29	0.10		GAM
Radium 228	15262-20-1	0.816	0.23	0.21	0.20		GAM
Thorium 228	14274-82-9	0.835	0.23	0.30			GAM
Thorium 232	TH-232	0.816	0.23	0.21			GAM
Americium 241	14596-10-2	U		0.18		U	GAM
Uranium 238	U-238	U		6.9		U	GAM
Uranium 235	15117-96-1	U		0.57		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-05 B0W698

DATA SHEET

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-05	Client sample id	B0W698
Dept sample id	7188-005	Location/Matrix	GP-2<15'bgs 17.5'-18.5' SOLID
Received	08/27/99	Collected	08/25/99 10:32
% solids	96.2	Custody/SAF No	B99-078-85 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.006	0.040	0.069	400	U	H
Technetium 99	14133-76-7	-0.081	0.13	0.39	15	U	TC
Neptunium 237	13994-20-2	-0.005	0.009	0.026		U	NP
Total Uranium (ug/g)	7440-61-1	0.814	0.10	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	0	0.025	0.055	1.0	U	PU
Plutonium 239/240	PU-239/240	-0.008	0.016	0.050	1.0	U	PU
Nickel 63	13981-37-8	-2.92	1.9	3.3	30	U	NI_L
Americium 241	14596-10-2	0.016	0.025	0.031	1.0	U	AM
Total Strontium	SR-RAD	58.8	3.2	0.63	1.0		SR
Thorium 228	14274-82-9	0.160	0.27	0.51	1.0	U	TH
Thorium 230	14269-63-7	0.660	0.28	0.22	1.0	J	TH
Thorium 232	TH-232	0.251	0.18	0.17	1.0	J	TH
Potassium 40	13966-00-2	10.5	0.77	0.38			GAM
Cobalt 60	10198-40-0	U		0.041	0.050	U	GAM
Cesium 137	10045-97-3	0.314	0.040	0.040	0.10		GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		0.11	0.10	U	GAM
Europium 155	14391-16-3	U		0.17	0.10	U	GAM
Radium 226	13982-63-3	0.424	0.078	0.079	0.10		GAM
Radium 228	15262-20-1	0.563	0.15	0.16	0.20		GAM
Thorium 228	14274-82-9	0.554	0.048	0.053			GAM
Thorium 232	TH-232	0.563	0.15	0.16			GAM
Americium 241	14596-10-2	U		0.22		U	GAM
Uranium 238	U-238	U		4.6		U	GAM
Uranium 235	15117-96-1	U		0.21		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-06 B0W699

DATA SHEET

SDG	7188	Client/Case no	Hanford	SDG-H0506	
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925		
Lab sample id	N908160-06	Client sample id	B0W699		
Dept sample id	7188-006	Location/Matrix	GP-2<15'bgs 20'-21'	SOLID	
Received	08/27/99	Collected	08/25/99 10:51		
% solids	95.6	Custody/SAF No	B99-078-86	B99-078	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.007	0.042	0.071	400	U	H
Technetium 99	14133-76-7	-0.045	0.15	0.46	15	U	TC
Neptunium 237	13994-20-2	0.008	0.023	0.046		U	NP
Total Uranium (ug/g)	7440-61-1	0.723	0.090	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	0.009	0.019	0.045	1.0	U	PU
Plutonium 239/240	PU-239/240	0.019	0.028	0.045	1.0	U	PU
Nickel 63	13981-37-8	-2.24	1.8	3.1	30	U	NI_L
Americium 241	14596-10-2	0.008	0.023	0.048	1.0	U	AM
Total Strontium	SR-RAD	22.7	1.2	0.37	1.0		SR
Thorium 228	14274-82-9	0.236	0.14	0.19	1.0	J	TH
Thorium 230	14269-63-7	1.01	0.25	0.16	1.0		TH
Thorium 232	TH-232	0.338	0.14	0.086	1.0	J	TH
Potassium 40	13966-00-2	12.4	0.50	0.18			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	11.1	0.12	0.036	0.10		GAM
Europium 152	14683-23-9	U		0.11	0.10	U	GAM
Europium 154	15585-10-1	U		0.080	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Radium 226	13982-63-3	0.428	0.053	0.058	0.10		GAM
Radium 228	15262-20-1	0.636	0.094	0.087	0.20		GAM
Thorium 228	14274-82-9	0.541	0.038	0.050			GAM
Thorium 232	TH-232	0.636	0.094	0.087			GAM
Americium 241	14596-10-2	U		0.11		U	GAM
Uranium 238	U-238	U		2.6		U	GAM
Uranium 235	15117-96-1	U		0.14		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-07 B0W6B0

DATA SHEET

SDG	7188	Client/Case no	Hanford	SDG-H0506	
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925		
Lab sample id	N908160-07	Client sample id	B0W6B0		
Dept sample id	7188-007	Location/Matrix	GP-2<15'bgs 22'-23'	SOLID	
Received	08/27/99	Collected	08/25/99 11:03		
% solids	96.7	Custody/SAF No	B99-078-87	B99-078	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.029	0.039	0.068	400	U	H
Technetium 99	14133-76-7	-0.080	0.16	0.46	15	U	TC
Neptunium 237	13994-20-2	0	0.003	0.013		U	NP
Total Uranium (ug/g)	7440-61-1	0.778	0.096	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	0	0.017	0.048	1.0	U	PU
Plutonium 239/240	PU-239/240	0.017	0.017	0.033	1.0	U	PU
Nickel 63	13981-37-8	-3.24	1.9	3.4	30	U	NI_L
Americium 241	14596-10-2	0.023	0.061	0.12	1.0	U	AM
Total Strontium	SR-RAD	7.27	0.58	0.45	1.0		SR
Thorium 228	14274-82-9	0.256	0.13	0.16	1.0	J	TH
Thorium 230	14269-63-7	0.331	0.15	0.19	1.0	J	TH
Thorium 232	TH-232	0.224	0.11	0.082	1.0	J	TH
Potassium 40	13966-00-2	14.1	0.71	0.26			GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	0.624	0.050	0.042	0.10		GAM
Europium 152	14683-23-9	U		0.084	0.10	U	GAM
Europium 154	15585-10-1	U		0.11	0.10	U	GAM
Europium 155	14391-16-3	U		0.12	0.10	U	GAM
Radium 226	13982-63-3	0.489	0.062	0.061	0.10		GAM
Radium 228	15262-20-1	0.739	0.14	0.12	0.20		GAM
Thorium 228	14274-82-9	0.520	0.039	0.042			GAM
Thorium 232	TH-232	0.739	0.14	0.12			GAM
Americium 241	14596-10-2	U		0.30		U	GAM
Uranium 238	U-238	U		4.0		U	GAM
Uranium 235	15117-96-1	U		0.15		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

N908160-08 B0W6B1

DATA SHEET

SDG	7188	Client/Case no	Hanford SDG-H0506
Contact	Kevin C. Johnson	Contract	TRB-SBB-207925
Lab sample id	N908160-08	Client sample id	B0W6B1
Dept sample id	7188-008	Location/Matrix	GP-2<15'bgs 24'-25' SOLID
Received	08/27/99	Collected	08/25/99 11:18
% solids	96.1	Custody/SAF No	B99-078-88 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.016	0.041	0.070	400	U	H
Technetium 99	14133-76-7	0.058	0.16	0.42	15	U	TC
Neptunium 237	13994-20-2	0	0.031	0.070		U	NP
Total Uranium (ug/g)	7440-61-1	0.708	0.088	0.007	1.0	J	U_T
Plutonium 238	13981-16-3	0.004	0.023	0.050	1.0	U	PU
Plutonium 239/240	PU-239/240	0.004	0.023	0.046	1.0	U	PU
Nickel 63	13981-37-8	-2.08	1.8	3.2	30	U	NI_L
Americium 241	14596-10-2	0.012	0.025	0.046	1.0	U	AM
Total Strontium	SR-RAD	12.5	0.66		1.0		SR
Thorium 228	14274-82-9	0.125	0.16	0.24	1.0	U	TH
Thorium 230	14269-63-7	0.486	0.22	0.25	1.0	J	TH
Thorium 232	TH-232	0.407	0.16	0.12	1.0	J	TH
Potassium 40	13966-00-2	12.6	1.7	0.28			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	27.3	0.19	0.061	0.10		GAM
Europium 152	14683-23-9	U		0.18	0.10	U	GAM
Europium 154	15585-10-1	U		0.084	0.10	U	GAM
Europium 155	14391-16-3	U		0.12	0.10	U	GAM
Radium 226	13982-63-3	U		0.11	0.10	U	GAM
Radium 228	15262-20-1	U		0.17	0.20	U	GAM
Thorium 228	14274-82-9	U		0.37		U	GAM
Thorium 232	TH-232	U		0.17		U	GAM
Americium 241	14596-10-2	U		0.066		U	GAM
Uranium 238	U-238	U		3.0		U	GAM
Uranium 235	15117-96-1	U		0.20		U	GAM

200 Area source chctzn-200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test AM Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Americium 241
Preparation batch 6893-125					
B0W693	N908160-02			7188-002	0.170 J
B0W694	N908160-03			7188-003	1.28
B0W697	N908160-04			7188-004	0.077 J
B0W698	N908160-05			7188-005	U
B0W699	N908160-06			7188-006	U
B0W6B1	N908160-08			7188-008	U
BLK (QC ID=31767)	N908160-10			7188-010	U
LCS (QC ID=31766)	N908160-09			7188-009	ok
Duplicate (N908160-01)	N908160-11			7188-011	ok J
Preparation batch 6893-126					
B0W692	N908160-01		A1	7188-001	0.178 J
B0W6B0	N908160-07		A1	7188-007	U
Duplicate (N908160-01)	N908160-15			7188-015	ok J

Nominal values and limits from method RDLs (pCi/g) 1.0
200 Area source chctzn-200-CW-1 OU

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test AM Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

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 6893-125 2σ prep error 5.0 % Reference Lab Notebook 6893 pg.125																
B0W693	N908160-02			0.050	0.500			81		788			44	10/08/99	10/08	SS-014
B0W694	N908160-03			0.039	0.500			77		788			44	10/08/99	10/08	SS-015
B0W697	N908160-04			0.039	0.500			75		788			44	10/08/99	10/08	SS-016
B0W698	N908160-05			0.031	0.500			71		815			44	10/08/99	10/08	SS-056
B0W699	N908160-06			0.048	0.500			74		815			44	10/08/99	10/08	SS-057
B0W6B1	N908160-08			0.046	0.500			67		813			44	10/08/99	10/08	SS-060
BLK (QC ID=31767)	N908160-10			0.049	0.500			82		813				10/08/99	10/08	SS-061
LCS (QC ID=31766)	N908160-09			0.056	0.500			83		785				10/08/99	10/08	SS-050
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.034	0.500			90		813			44	10/08/99	10/08	SS-062
Preparation batch 6893-126 2σ prep error 5.0 % Reference Lab Notebook 6893 pg.125																
B0W692	N908160-01		A1	0.068	0.500			65		724			52	10/15/99	10/16	SS-035
B0W6B0	N908160-07		A1	0.12	0.500			44		724			52	10/15/99	10/16	SS-036
Duplicate (N908160-01) (QC ID=32220)	N908160-15			0.043	0.500			58		862			54	10/15/99	10/18	SS-006
Nominal values and limits from method				1.0	0.500			20-105		700	100		180			

PROCEDURES	REFERENCE	AM/CMPLATE
	EP-060	Soil Preparation, rev 0
	EP-070	Soil Dissolution, rev 0
	EP-940	Plutonium Purification, rev 0
	EP-960	Americium-Curium Purification, rev 0
	EP-008	Heavy Elements Electroplating, rev 0

AVERAGES ± 2 SD FOR 12 SAMPLES
MDA 0.052 ± 0.047
YIELD 72 ± 25

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test NP Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

NEPTUNIUM IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Neptunium 237	
Preparation batch 6893-125						
B0W692	N908160-01			7188-001	U	
B0W693	N908160-02			7188-002	U	
B0W694	N908160-03			7188-003	U	
B0W697	N908160-04			7188-004	U	
B0W698	N908160-05			7188-005	U	
B0W699	N908160-06			7188-006	U	
B0W6B0	N908160-07			7188-007	U	
B0W6B1	N908160-08			7188-008	U	
BLK (QC ID=31767)	N908160-10			7188-010	U	
LCS (QC ID=31766)	N908160-09			7188-009	ok	
Duplicate (N908160-01)	N908160-11			7188-011	-	U

Nominal values and limits from method RDLs (pCi/g)
200 Area source chctzn-200-CW-1 OU

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 6893-125	2σ prep error 5.0 %			Reference Lab Notebook 6893 pg.125												
B0W692	N908160-01			0.012	1.00			76		191			48	10/08/99	10/12	BETA
B0W693	N908160-02			0.015	1.00			73		191			48	10/08/99	10/12	BETA
B0W694	N908160-03			0.023	1.00			48		191			48	10/08/99	10/12	BETA
B0W697	N908160-04			0.047	1.00			33		185			48	10/08/99	10/12	BETA
B0W698	N908160-05			0.026	1.00			49		185			48	10/08/99	10/12	BETA
B0W699	N908160-06			0.046	1.00			42		200			48	10/09/99	10/12	BETA
B0W6B0	N908160-07			0.013	1.00			74		200			48	10/09/99	10/12	BETA
B0W6B1	N908160-08			0.070	1.00			23		200			48	10/09/99	10/12	BETA
BLK (QC ID=31767)	N908160-10			0.023	1.00			39		200				10/08/99	10/12	BETA
LCS (QC ID=31766)	N908160-09			0.027	1.00			51		200				10/09/99	10/12	BETA
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.14	1.00			11		200			48	10/09/99	10/12	BETA
Nominal values and limits from method					1.00			20-105		100						

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test NP	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY, cont.

NEPTUNIUM IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

PROCEDURES	REFERENCE	NP237PLATE
	EP-060	Soil Preparation, rev 0
	EP-070	Soil Dissolution, rev 0
	EP-930	Neptunium Purification, rev 0

AVERAGES ± 2 SD	MDA	0.040	±	0.075
FOR 11 SAMPLES	YIELD	47	±	42

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test PU	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Plutonium 238		Plutonium 239/240	
Preparation batch 6893-125								
B0W692	N908160-01			7188-001	U		0.181	J
B0W693	N908160-02			7188-002	U		0.065	J
B0W694	N908160-03			7188-003	U		1.14	
B0W697	N908160-04			7188-004	U		U	
B0W698	N908160-05			7188-005	U		U	
B0W699	N908160-06			7188-006	U		U	
B0W6B0	N908160-07			7188-007	U		U	
B0W6B1	N908160-08			7188-008	U		U	
BLK (QC ID=31767)	N908160-10			7188-010	U		U	
LCS (QC ID=31766)	N908160-09			7188-009	ok		ok	
Duplicate (N908160-01)	N908160-11			7188-011	-	U	ok	J
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0	
200 Area source chctzn-200-CW-1 OU								

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 6893-125	2σ prep error 5.0 %			Reference Lab Notebook 6893 pg.125												
B0W692	N908160-01			0.033	0.500			86		1086			46	10/06/99	10/10	SS-006
B0W693	N908160-02			0.052	0.500			63		684			42	10/06/99	10/06	SS-005
B0W694	N908160-03			0.039	0.500			85		684			42	10/06/99	10/06	SS-008
B0W697	N908160-04			0.049	0.500			92		682			42	10/06/99	10/06	SS-010
B0W698	N908160-05			0.055	0.500			86		682			42	10/06/99	10/06	SS-012
B0W699	N908160-06			0.045	0.500			76		682			42	10/06/99	10/06	SS-013
B0W6B0	N908160-07			0.048	0.500			85		640			42	10/06/99	10/06	SS-058
B0W6B1	N908160-08			0.050	0.500			75		811			44	10/06/99	10/08	SS-063
BLK (QC ID=31767)	N908160-10			0.043	0.500			89		811				10/06/99	10/08	SS-064
LCS (QC ID=31766)	N908160-09			0.033	0.500			92		815				10/06/99	10/08	SS-055
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.056	0.500			83		811			44	10/06/99	10/08	SS-065
Nominal values and limits from method				1.0	0.500			20-105		10	100		180			

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test	PU
Matrix	SOLID
SDG	7188
Contact	Kevin C. Johnson

METHOD SUMMARY, cont.

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG-H0506

PROCEDURES	REFERENCE	PUPLATE
	EP-060	Soil Preparation, rev 0
	EP-070	Soil Dissolution, rev 0
	EP-940	Plutonium Purification, rev 0
	EP-008	Heavy Elements Electroplating, rev 0

AVERAGES ± 2 SD	MDA	0.046	±	0.016
FOR 11 SAMPLES	YIELD	83	±	17

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test TH Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Thorium 228	Thorium 230	Thorium 232
Preparation batch 6893-125							
B0W692	N908160-01			7188-001	0.405 J	U	0.254 J
B0W693	N908160-02			7188-002	U	0.441 J	0.265 J
B0W694	N908160-03			7188-003	0.246 J	0.683 J	0.150 J
B0W697	N908160-04			7188-004	0.326 J	U	0.465 J
B0W698	N908160-05			7188-005	U	0.660 J	0.251 J
B0W699	N908160-06			7188-006	0.236 J	1.01	0.338 J
B0W6B0	N908160-07			7188-007	0.256 J	0.331 J	0.224 J
B0W6B1	N908160-08			7188-008	U	0.486 J	0.407 J
BLK (QC ID=31767)	N908160-10			7188-010	U	U	U
LCS (QC ID=31766)	N908160-09			7188-009		ok	
Duplicate (N908160-01)	N908160-11			7188-011	ok J	ok J	ok J
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0
200 Area source chctzn-200-CW-1 OU							

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 6893-125	2σ prep error 5.0 %			Reference Lab Notebook 6893 pg.125												
B0W692	N908160-01			0.17	0.250			90		600			44	10/08/99	10/08	SS-027
B0W693	N908160-02			0.36	0.250			35		600			44	10/08/99	10/08	SS-029
B0W694	N908160-03			0.20	0.250			59		600			44	10/08/99	10/08	SS-031
B0W697	N908160-04			0.26	0.250			51		600			44	10/08/99	10/08	SS-032
B0W698	N908160-05			0.51	0.250			34		600			44	10/08/99	10/08	SS-033
B0W699	N908160-06			0.19	0.250			68		600			44	10/08/99	10/08	SS-034
B0W6B0	N908160-07			0.19	0.250			77		600			44	10/08/99	10/08	SS-035
B0W6B1	N908160-08			0.25	0.250			51		600			44	10/08/99	10/08	SS-036
BLK (QC ID=31767)	N908160-10			0.14	0.250			56		1087				10/08/99	10/10	SS-027
LCS (QC ID=31766)	N908160-09			0.20	0.250			59		600				10/08/99	10/08	SS-038
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.16	0.250			86		1086			46	10/08/99	10/10	SS-031
Nominal values and limits from method				1.0	0.250			20-105		200			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test TH	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

PROCEDURES	REFERENCE	TMPLATE
	EP-000	Data Entry and Document Preparation, rev 0
	EP-001	Q.C. Preparation, rev 0
	EP-003	Tracing, rev 0
	EP-008	Heavy Elements Electroplating, rev 0
	EP-070	Soil Dissolution, rev 0
	RP-901	Thorium Purification - Small Aliquot, rev 0

AVERAGES ± 2 SD	MDA	0.24	±	0.22
FOR 11 SAMPLES	YIELD	61	±	37

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test U	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	1: Uranium 233/234		2: Uranium 235		3: Uranium 238		RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6893-125														
B0W694	N908160-03			7188-003	0.858	J	0.067	J	0.733	J	117	18	9	4
BLK (QC ID=31767)	N908160-10			7188-010	U		U		U					
LCS (QC ID=31766)	N908160-09			7188-009	ok		ok		ok					
Duplicate (N908160-03)	N908160-13			7188-013	ok	J	ok	J	ok	J	112	17	7	3
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0		1.0		100		4	
200 Area source chctzn-200-CW-1 OU											Averages 114		8	

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 6893-125	2σ prep error 5.0 %			Reference Lab Notebook 6893 pg.125												
B0W694	N908160-03			0.025	1.00			92		674			43	10/07/99	10/07	SS-027
BLK (QC ID=31767)	N908160-10			0.021	1.00			82		674				10/07/99	10/07	SS-031
LCS (QC ID=31766)	N908160-09			0.13	1.00			92		674				10/07/99	10/07	SS-029
Duplicate (N908160-03) (QC ID=31995)	N908160-13			0.028	1.00			90		674			43	10/07/99	10/07	SS-032
Nominal values and limits from method				1.0	1.00			30-105		150	100		180			

PROCEDURES	REFERENCE	UPLATE
	EP-060	Soil Preparation, rev 0
	EP-070	Soil Dissolution, rev 0
	EP-910	Uranium Purification, rev 0
	EP-008	Heavy Elements Electroplating, rev 0

AVERAGES ± 2 SD	MDA	0.051	± 0.11
FOR 4 SAMPLES	YIELD	89	± 10

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test	SR
Matrix	SOLID
SDG	7188
Contact	Kevin C. Johnson

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium
Preparation batch 6893-125					
B0W692	N908160-01			7188-001	2.98
B0W693	N908160-02			7188-002	0.991 J
B0W694	N908160-03			7188-003	9.36
B0W697	N908160-04			7188-004	4.77
B0W698	N908160-05			7188-005	58.8
B0W699	N908160-06			7188-006	22.7
B0W6B0	N908160-07			7188-007	7.27
B0W6B1	N908160-08			7188-008	12.5
BLK (QC ID=31767)	N908160-10			7188-010	U
LCS (QC ID=31766)	N908160-09			7188-009	ok
Duplicate (N908160-01)	N908160-11			7188-011	ok
Nominal values and limits from method				RDLs (pCi/g)	1.0

200 Area source chctzn-200-CW-1 OU

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 6893-125	2σ prep error 10.0 % Reference Lab Notebook 6893 pg.125															
B0W692	N908160-01			0.15	1.00			81		200			37	10/01/99	10/01	GRB-218
B0W693	N908160-02			0.17	1.00			83		200			37	10/01/99	10/01	GRB-219
B0W694	N908160-03			0.18	1.00			90		400			37	10/01/99	10/01	GRB-203
B0W697	N908160-04			0.16	1.00			85		200			37	10/01/99	10/01	GRB-217
B0W698	N908160-05			0.63	1.00			87		400			37	10/01/99	10/01	GRB-225
B0W699	N908160-06			0.37	1.00			89		400			37	10/01/99	10/01	GRB-227
B0W6B0	N908160-07			0.45	1.00			82		200			37	10/01/99	10/01	GRB-217
B0W6B1	N908160-08				1.00			87		400			37	10/01/99	10/01	GRB-229
BLK (QC ID=31767)	N908160-10			0.23	1.00			71		400				10/01/99	10/01	GRB-231
LCS (QC ID=31766)	N908160-09			0.60	1.00			74		400				10/01/99	10/01	GRB-230
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.21	1.00			87		200			37	10/01/99	10/01	GRB-223
Nominal values and limits from method				1.0	1.00					100			180			

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test SR	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

PROCEDURES	REFERENCE	SRTOTAL
	RP-500	Strontium - Initial Separation, rev 0
	RP-519	Strontium-89,90 Demounting and Yttrium Purification, rev 0

AVERAGES ± 2 SD	MDA	0.32	±	0.37
FOR 11 SAMPLES	YIELD	83	±	12

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test TC Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

TECHNETIUM 99 IN SOIL

BETA COUNTING

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Technetium 99	
Preparation batch 6893-125						
B0W697	N908160-04			7188-004	U	
B0W698	N908160-05			7188-005	U	
B0W699	N908160-06			7188-006	U	
B0W6B0	N908160-07			7188-007	U	
B0W6B1	N908160-08			7188-008	U	
BLK (QC ID=31857)	N909019-09			7191-009	U	
LCS (QC ID=31856)	N909019-08			7191-008	ok	
Duplicate (N908160-04)	N908160-12			7188-012	-	U
Nominal values and limits from method				RDLs (pCi/g)	15	
200 Area source chctzn-200-CW-1 OU						

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 6893-125	2σ prep error 10.0 %				Reference Lab Notebook 6893 pg.125											
B0W697	N908160-04			0.54	1.00			64		101			47	10/05/99	10/11	GRB-217
B0W698	N908160-05			0.39	1.00			88		101			47	10/05/99	10/11	GRB-218
B0W699	N908160-06			0.46	1.00			76		101			47	10/05/99	10/11	GRB-219
B0W6B0	N908160-07			0.46	1.02			72		101			47	10/05/99	10/11	GRB-220
B0W6B1	N908160-08			0.42	1.03			81		101			47	10/05/99	10/11	GRB-221
BLK (QC ID=31857)	N909019-09			0.30	1.00			55		400				10/05/99	10/11	GRB-230
LCS (QC ID=31856)	N909019-08			0.23	1.00			76		400				10/05/99	10/11	GRB-229
Duplicate (N908160-04) (QC ID=31769)	N908160-12			0.45	1.00			76		101			47	10/05/99	10/11	GRB-222
Nominal values and limits from method				15	1.01			20-105		50			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test	TC
Matrix	SOLID
SDG	7188
Contact	Kevin C. Johnson

METHOD SUMMARY, cont.

TECHNETIUM 99 IN SOIL

BETA COUNTING

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG-H0506

PROCEDURES	REFERENCE	TC99TRLSC
	EP-060	Soil Preparation, rev 0
	EP-020	Sample Leach For Technetium-99, rev 0
	EP-540	Technetium-99 Purification, rev 0

AVERAGES ± 2 SD	MDA	0.41	±	0.20
FOR 8 SAMPLES	YIELD	74	±	20

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test	GAM
Matrix	SOLID
SDG	7188
Contact	Kevin C. Johnson

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60	Cesium 137
Preparation batch 6893-125						
B0W692	N908160-01			7188-001	U	632
B0W693	N908160-02			7188-002	U	592
B0W694	N908160-03			7188-003	U	7180
B0W697	N908160-04			7188-004	U	143
B0W698	N908160-05			7188-005	U	0.314
B0W699	N908160-06			7188-006	U	11.1
B0W6B0	N908160-07			7188-007	U	0.624
B0W6B1	N908160-08			7188-008	U	27.3
BLK (QC ID=31767)	N908160-10			7188-010	U	U
LCS (QC ID=31766)	N908160-09			7188-009	ok	ok
Duplicate (N908160-01)	N908160-11			7188-011	- U	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
200 Area source chctzn-200-CW-1 OU						

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 6893-125	2σ prep error 15.0 % Reference Lab Notebook 6893 pg.125															
B0W692	N908160-01			0.20	148					423			36	09/14/99	09/30	JR,01,00
B0W693	N908160-02			0.063	721					322			41	09/14/99	10/05	MB,07,00
B0W694	N908160-03			0.52	106					412			36	09/14/99	09/30	JR,03,00
B0W697	N908160-04			0.13	748					142			41	09/14/99	10/05	02,01,00
B0W698	N908160-05			0.091	785					143			41	09/14/99	10/05	02,03,00
B0W699	N908160-06			0.059	795					143			41	09/14/99	10/05	02,04,00
B0W6B0	N908160-07			0.086	758					143			41	09/14/99	10/05	MB,05,00
B0W6B1	N908160-08			0.055	766					143			41	09/14/99	10/05	MB,07,00
BLK (QC ID=31767)	N908160-10			0.016	689					421				09/14/99	10/01	MB,05,00
LCS (QC ID=31766)	N908160-09			0.022	689					201				09/14/99	10/05	01,01,00
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.13	148					670			37	09/14/99	10/01	JR,03,00
Nominal values and limits from method				0.050	514					100			180			

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test GAM Matrix SOLID	Client Hanford
SDG 7188	Contract TRB-SBB-207925
Contact Kevin C. Johnson	Case no SDG-H0506

METHOD SUMMARY, cont.

GAMMA SCAN

GAMMA SPECTROSCOPY

PROCEDURES	REFERENCE	GAMMAHI
	EP-060	Soil Preparation, rev 0
	EP-100	Ge(Li) Preparation for Environmental Samples, rev 0

AVERAGES ± 2 SD	MDA 0.12	± 0.28
FOR 11 SAMPLES	YIELD	±

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test U T Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

URANIUM, TOTAL IN SOIL
KINETIC PHOSPHORIMETRY

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Uranium
Preparation batch 6893-125					
B0W692	N908160-01			7188-001	0.916 J
B0W693	N908160-02			7188-002	0.878 J
B0W694	N908160-03			7188-003	1.99
B0W697	N908160-04			7188-004	0.890 J
B0W698	N908160-05			7188-005	0.814 J
B0W699	N908160-06			7188-006	0.723 J
B0W6B0	N908160-07			7188-007	0.778 J
B0W6B1	N908160-08			7188-008	0.708 J
BLK (QC ID=31767)	N908160-10			7188-010	U
LCS (QC ID=31766)	N908160-09		A0R1	7188-009	ok
Duplicate (N908160-01)	N908160-11			7188-011	ok J
Nominal values and limits from method			RDLs (ug/g)		1.0

200 Area source chctzn-200-CW-1 OU

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA ug/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6893-125	2σ prep error 9.0 %			Reference Lab Notebook 6893 pg.125												
B0W692	N908160-01			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W693	N908160-02			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W694	N908160-03			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W697	N908160-04			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W698	N908160-05			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W699	N908160-06			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W6B0	N908160-07			0.007	0.0500								38	10/02/99	10/02	KPA-001
B0W6B1	N908160-08			0.007	0.0500								38	10/02/99	10/02	KPA-001
BLK (QC ID=31767)	N908160-10			0.007	0.0500									10/02/99	10/02	KPA-001
LCS (QC ID=31766)	N908160-09		A0R1	0.072	0.0500									10/06/99	10/06	KPA-001
Duplicate (N908160-01) (QC ID=31768)	N908160-11			0.007	0.0500								38	10/02/99	10/02	KPA-001
Nominal values and limits from method				1.0	0.0500								180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test U T Matrix SOLID	
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY, cont.

URANIUM, TOTAL IN SOIL

KINETIC PHOSPHORIMETRY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

PROCEDURES	REFERENCE	UKPA
	EP-060	Soil Preparation, rev 0
	EP-070	Soil Dissolution, rev 0
	EP-044	Preparation of Total Uranium by Kinetic Phosphorimetry, rev 1
	EP-928	Total Uranium by Kinetic Phosphorimetry, rev 0

AVERAGES ± 2 SD	MDA	0.013 ± 0.039
FOR 11 SAMPLES	YIELD	±

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test H Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Tritium	
Preparation batch 6893-125						
B0W697	N908160-04			7188-004	U	
B0W698	N908160-05			7188-005	U	
B0W699	N908160-06			7188-006	U	
B0W6B0	N908160-07			7188-007	U	
B0W6B1	N908160-08			7188-008	U	
BLK (QC ID=31767)	N908160-10			7188-010	U	
LCS (QC ID=31766)	N908160-09			7188-009	ok	J
Duplicate (N908160-04)	N908160-12			7188-012	-	U

Nominal values and limits from method RDLs (pCi/g) 400
200 Area source chctzn-200-CW-1 OU

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 6893-125 2σ prep error 10.0 % Reference Lab Notebook 6893 pg.125																
B0W697	N908160-04			0.069	20.2			100		120			47	09/28/99	10/11	LSC-007
B0W698	N908160-05			0.069	20.3			100		120			47	09/28/99	10/11	LSC-007
B0W699	N908160-06			0.071	20.1			100		120			47	09/28/99	10/11	LSC-007
B0W6B0	N908160-07			0.068	20.9			100		120			47	09/28/99	10/11	LSC-007
B0W6B1	N908160-08			0.070	20.3			100		120			47	09/28/99	10/11	LSC-007
BLK (QC ID=31767)	N908160-10			0.069	20.4			100		120				10/04/99	10/11	LSC-007
LCS (QC ID=31766)	N908160-09			0.069	20.4			100		120				10/04/99	10/11	LSC-007
Duplicate (N908160-04) (QC ID=31769)	N908160-12			0.069	20.1			100		120			47	09/28/99	10/11	LSC-007
Nominal values and limits from method				400	20.4					25			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test H	Matrix SOLID
SDG 7188	
Contact Kevin C. Johnson	

METHOD SUMMARY, cont.

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG-H0506	

PROCEDURES	REFERENCE	EPA906.0
	EP-060	Soil Preparation, rev 0
	EP-211	Tritium in Solid Samples by Azeotropic Distillation, rev 0

AVERAGES ± 2 SD	MDA	0.069	±	0.002
FOR 8 SAMPLES	YIELD	100	±	0

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	11/02/99

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0506

Test NI L Matrix SOLID
SDG 7188
Contact Kevin C. Johnson

METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Nickel 63	
Preparation batch 6893-125						
B0W697	N908160-04			7188-004	U	
B0W698	N908160-05			7188-005	U	
B0W699	N908160-06			7188-006	U	
B0W6B0	N908160-07			7188-007	U	
B0W6B1	N908160-08			7188-008	U	
BLK (QC ID=31857)	N909019-09			7191-009	U	
LCS (QC ID=31856)	N909019-08			7191-008	ok	
Duplicate (N908160-04)	N908160-12			7188-012	-	U

Nominal values and limits from method RDLs (pCi/g) 30
200 Area source chctzn-200-CW-1 OU

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 6893-125	2σ prep error 10.0 %				Reference Lab Notebook 6893 pg.125											
B0W697	N908160-04			5.0	0.500			46		100			43	10/06/99	10/07	LSC-004
B0W698	N908160-05			3.3	0.500			69		100			43	10/06/99	10/07	LSC-004
B0W699	N908160-06			3.1	0.500			75		100			43	10/06/99	10/07	LSC-004
B0W6B0	N908160-07			3.4	0.500			67		100			43	10/06/99	10/07	LSC-004
B0W6B1	N908160-08			3.2	0.500			71		100			43	10/06/99	10/07	LSC-004
BLK (QC ID=31857)	N909019-09			2.6	0.500			88		100				10/06/99	10/07	LSC-004
LCS (QC ID=31856)	N909019-08			2.5	0.500			89		100				10/06/99	10/07	LSC-004
Duplicate (N908160-04) (QC ID=31769)	N908160-12			3.8	0.500			60		100			43	10/06/99	10/07	LSC-004
Nominal values and limits from method				30	0.500					10			180			

PROCEDURES	REFERENCE	NI63LSC
	EP-060	Soil Preparation, rev 0
	EP-431	Nickel-63 Purification, rev 0

AVERAGES ± 2 SD FOR 8 SAMPLES
MDA 3.4 ± 1.6
YIELD 71 ± 28

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

DATA SHEET

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

DUPLICATE

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

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

GUIDE, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

MATRIX SPIKE

for the recovery.

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

SDG 7188
Contact Kevin C. Johnson

REPORT GUIDE

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

SDG 7188
Contact Kevin C. Johnson

Client Hanford
Contract TRB-SBB-207925
Case no SDG-H0506

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/02/99

METHOD SUMMARY

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

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

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Price Code 8N	Data Turnaround 45 Days		
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 12.5 – 13.5		SAF No. B99-078
Ice Chest No. SMC 127	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TMA/~~RICRA~~ 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8760
			COA B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B0W593	Soil	8/25/99	09:09	X	X				X	Bowers	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Refer JB	Date/Time 8/25/99/1410
Relinquished By Ref JB	Date/Time 8-26-99 0800	Received By R. Fellows / R. Fellows	Date/Time 0800 8-26-99
Relinquished By R. Fellows / R. Fellows	Date/Time 1400 8-26-99	Received By Fed Ex	Date/Time 8-26-99
Relinquished By Fed Ex	Date/Time 8-27-99 9:30	Received By TNV M. Goldenberg	Date/Time 9:30 8-27-99

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 14-15' - ~~15'~~ 8-25-99		SAF No. B99-078		
Ice Chest No. FBC 99-018	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To TMA/~~RBCRA~~ 8-25-99	Offsite Property No. NA		Bill of Lading/Air Bill No. N/A		
			COA B20W1-~~671B~~ 671C		

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B0W394	Soil	8/25/99	09:26	X	X	X			X		CPM 1290
									Bowers 42		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By	Brent Porter	8/25/99 1410
Received By	Refer JB	8/25/99 1410
Relinquished By	Ref JB	8-26-99 0800
Received By	R. Fahlberg / R. Fahlberg	8-26-99 0800
Relinquished By	R. Fahlberg / R. Fahlberg	8-26-99 1400
Received By	Fed Ex	8-26-99
Relinquished By	FedEx	8-27-99 9:30
Received By	TNV M. Goldenberg	8-27-99 9:30

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241

Collector unavailable to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-84

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15'-16'		SAF No.: B99-078
Ice Chest No.: SML-591	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: TMA ~~RECKA~~ 8.05.99	Offsite Property No.: A990231		Bill of Lading/Air Bill No.: 42357952 8771
			COA: B20CW1-671C

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W697	Soil	8/25/99	10:04	X	X	X	X	X					
												Bowers	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99 1410	Received By: Refer JB	Date/Time: 8/25/99 1410
Relinquished By: RFG #1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/Catherine	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Catrice	Date/Time: 8/26/99 1400	Received By: FEDEX	Date/Time: 8-26-99
Relinquished By: FedEx	Date/Time: 8-27-99 9:30	Received By: TNV M. Goldenberg	Date/Time: 8-27-99 9:30

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 2 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Price Code 8N	Data Turnaround 45 Days		
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 15'-16'		SAF No. B99-078
Ice Chest No. SML-591	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TMA/~~RECRA~~ 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8771
			COA B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None										
	Type of Container	aG										
	No. of Container(s)	1										
Special Handling and/or Storage	Volume	1000mL										
SAMPLE ANALYSIS		See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0W697	Soil	8/25/99	10:04	X									BOWERS

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Refer JB	Date/Time 8/25/99/1410
Relinquished By RFG #1B	Date/Time 8/26/99 11:00	Received By CTRICE/C Trice	Date/Time 8/26/99 11:00
Relinquished By CTRICE/C Trice	Date/Time 8/26/99 14:00	Received By FEDEX	Date/Time 8-26-99
Relinquished By FedEx	Date/Time 8-27-99 9:30	Received By TNV McGoldenberg	Date/Time 8-27-99 9:30

SPECIAL INSTRUCTIONS
See chain of custody comments on SAF B99-078.
COLLECTOR UNAVAILABLE TO SIGN COC
(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241)/Strontium-89,90 -- Total Sr/ Total Uranium (Uranium)/Isotopic Plutonium/Isotopic Thorium (Thorium-232)/ Americium-241/

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 17.5'-18.5'		SAF No. B99-078
Ice Chest No. SML 127	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TAA ~~[illegible]~~ 8.25.99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8760
			COA B20CW1 671C

Price Code 8N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W698	Soil	8/25/99	10:32	X*	X*	X*	X*	X*					
												Bowers	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99 1410	Received By Peter 1B	Date/Time 8/25/99 1410
Relinquished By Peter 1-B	Date/Time 8-26-99 0800	Received By R. Fahlberg / R. Fahlberg	Date/Time 0800 8-26-99
Relinquished By R. Fahlberg / R. Fahlberg	Date/Time 1400 8-26-99	Received By Fed Ex	Date/Time 8-26-99
Relinquished By FedEx	Date/Time 8-27-99 9:30	Received By TNW M. Goldenberg	Date/Time 9:30 8-27-99

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 2 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 17.5' - 18.5'		SAF No. B99-078	
Ice Chest No. SML 127	Field Logbook No. EL-1511		Method of Shipment Federal Express	
Shipped To TMA/~~RECRA~~ ~~B108~~-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8760	
			COA B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None										
	Type of Container	aG										
	No. of Container(s)	1										
Special Handling and/or Storage	Volume	1000mL										
SAMPLE ANALYSIS		See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
BCW698	Soil	8/25/99	10:32	X									Bowers/M

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By Ref 1.13	Date/Time 8.26.99 0800	Received By R. Fellberg / R. Fellberg	Date/Time 0800 8.26.99
Relinquished By R Fellberg / R. Fellberg	Date/Time 1400 8-26-99	Received By Fed Ex	Date/Time 8-26-99
Relinquished By Fed Ex 8-27-99 9:30	Date/Time	Received By TNV M. Goldenberg	Date/Time 9:30 8-27-99

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Collector not available to sign COC

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 20'-21'		SAF No. B99-078
Ice Chest No. SML-591	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TMA/~~RECRA~~ 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8771
			COA B20CW1 671C

Price Code 8N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W699	Soil	8/25/99	10:51	X	X	X	X	X					
												Downsml	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By Brenton R. Porter 8/25/99/1410	Received By Peter JB 8/25/99/1410	Date/Time
Relinquished By PF6 #1B 8/26/99 11:00	Received By CTRICE/C Trice 8/26/99 11:00	Date/Time
Relinquished By CTRICE/C Trice 8/26/99 14:00	Received By FEDEX 8-26-99	Date/Time
Relinquished By FedEx 8-27-99 9:30	Received By TNV M. Goldenberg 8-27-99 9:30	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 2 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Price Code 8N	Data Turnaround 45 Days		
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 20'-21'		SAF No. B99-078
Ice Chest No. SML-591	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TMA/~~RICRA~~ 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8771
			COA B20CW1-671C

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None										
	Type of Container	aG										
Special Handling and/or Storage	No. of Container(s)	1										
	Volume	1000mL										
SAMPLE ANALYSIS		See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0W699	Soil	8/25/99	10:51	X									Dowsy

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By RFG# JB	Date/Time 8/26/99 11:00	Received By CTRICE/Chris	Date/Time 8/26/99 11:00
Relinquished By CTRICE/Chris	Date/Time 8/26/99 14:00	Received By FEDEX	Date/Time 8-26-99
Relinquished By FedEx	Date/Time 8-27-99 9:30	Received By TNV M. Goldenberg	Date/Time 8-27-99 9:30

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 22'-23'	SAF No. B99-078	
Ice Chest No. SML-591	Field Logbook No. EL-1511	Method of Shipment Federal Express	
Shipped To TNA ~~WECRA~~ KN 8-25-99	Offsite Property No. A990231	Bill of Lading/Air Bill No. 42357952 8771	
		COA B20CW1671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W680	Soil	8/25/99	11:03	X	X	X	X	X					
											DWT M1		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By RFGH JB	Date/Time 8/26/99 11:00	Received By CTRICE/C.Trice	Date/Time 8/26/99 11:00
Relinquished By CTRICE/CTrice	Date/Time 8/26/99 14:00	Received By FEDEX	Date/Time 8-26-99
Relinquished By FedEx 8-27-99	Date/Time 9:30	Received By TNV M. Goldenberg 8-27-99	Date/Time 9:30

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 2 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 22'-23'		SAF No. B99-078		
Ice Chest No. SML-591	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To TNA/~~RICRA~~ 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8771		
			COA B20CW1-671C		

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None										
	Type of Container	aG										
	No. of Container(s)	1										
Special Handling and/or Storage	Volume	1000mL										
SAMPLE ANALYSIS		See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
√ B0W6B0	Soil	8/25/99	11:03	X									Dawson

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/14:10	Received By Peter JB	Date/Time 8/25/99/14:10
Relinquished By RF6#1B	Date/Time 8/26/99 11:00	Received By CTRICE/Chrice	Date/Time 8/26/99 11:00
Relinquished By CTRICE/Chrice	Date/Time 8/26/99 14:00	Received By FEDEX	Date/Time 8-26-99
Relinquished By FedEx	Date/Time 8-27-99 9:30	Received By TNU M. Goldenberg	Date/Time 9:30 8-27-99
LABORATORY SECTION	Received By	Title	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 24' - 25'		SAF No. B99-078
Ice Chest No. SMC 127	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To TMA/~~RECRA~~ BAB 8-25-99	Offsite Property No. A990231		Bill of Lading/Air Bill No. 4235 7952 8760
			COA B20CW1 671C

Price Code 8N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W681	Soil	8/25/99	11:18	X	X	X	X	X					
											B0W5M1		

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By Brent Porter 8/25/99/1410	Received By Refer JB 8/25/99/1410	
Relinquished By R.E. J.B. 8-26-99 0800	Received By R. Fahlberg/R. Fahlberg 8-26-99 0800	
Relinquished By R. Fahlberg/R. Fahlberg 8-26-99 1400	Received By Fed Ex 8-26-99	
Relinquished By Fed Ex 8-27-99 9:30	Received By TNW M. Goldenberg 8-27-99 9:30	
LABORATORY SECTION	Received By	Title / Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By / Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 2 of 2

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Price Code 8N	Data Turnaround 45 Days		
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 24' - 25'	SAF No. B99-078	
Ice Chest No. SML 127	Field Logbook No. EL-1511	Method of Shipment Federal Express	
Shipped To TMA/~~RECRA~~ 8-25-99	Offsite Property No. A990231	Bill of Lading/Air Bill No. 4235 7952 8760	
		COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None										
	Type of Container	aG										
	No. of Container(s)	1										
Special Handling and/or Storage	Volume	1000mL										
SAMPLE ANALYSIS		See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0W6B1	Soil	8/25/99	11:18	X									B0W5M1

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By Peter J.B	Date/Time 8.26.99 0800	Received By R. Fahlberg / R. Fahlberg	Date/Time 0800 8.26.99
Relinquished By R. Fahlberg / R. Fahlberg	Date/Time 1400 8.26.99	Received By Fed Ex	Date/Time 8-26-99
Relinquished By FedEx	Date/Time 8-27-99 9:30	Received By TNV M. Goldenberg	Date/Time 9:30 8-27-99
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COA

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 10'-11'		SAF No. B99-078		
Ice Chest No. FTRC 99-018	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To TMA/~~RECIA~~ D10 8-25-99	Offsite Property No. N D		Bill of Lading/Air Bill No. N/A		
			COA B20CW1-671C		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No. / Matrix * / Sample Date / Sample Time										
√ B0W692 / Soil / 8/25/99 / 08:45	X	X						X	Bowers	
										CPM
										400

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	Brent Porter	8/25/99 1410	Received By	Peter JB 8/25/99 1410
Relinquished By	Peter JB	8.26.99 0800	Received By	R. Fahlberg / R. Fahlberg 8.26.99 0800
Relinquished By	R. Fahlberg / R. Fahlberg 8.26.99	1400	Received By	Fed Ex 8-26-99 9:30
Relinquished By	Fed Ex 8-27-99 9:30		Received By	TNV M. Goldenberg 8-27-99

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

Collector unavailable to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Thermo NUtech - Richmond

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: Bechtel Hanford Inc Date/Time received 8-27-99 9:30

CoC No. B 99-078-81, 79

Container I.D. No. _____ 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: 3 (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 M. Goldenberg Date: 8-27-99 Time: 9:30

LOGIN

TNU W.O. No. _____ Group No. _____ Client W.O. No. _____

PROGRAM MANAGER

Sample holding times exceeded? Yes [ ] No [ ]

Client Notified: Name _____ Date/time _____

Thermo NUtech - Richmond

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: Bechtel Hanford Inc Date/Time received 8-27-99 9:30

CoC No. B99-078-85, 88, 80

Container I.D. No. SML 127 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: 5
7. Number of containers per sample: _____ (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 M. Coldenberg Date: 8-27-99 Time: 9:30

LOGIN

TNU W.O. No. _____ Group No. _____ Client W.O. No. _____

PROGRAM MANAGER

Sample holding times exceeded? Yes [ ] No [ ]

Client Notified: Name _____ Date/time _____

Thermo NUtech - Richmond

SAMPLE RECEIPT CHECKLIST

SAMPLE RECEIPT

Client: Bechtel Hanford Inc Date/Time received 8-27-99 9:30

CoC No. B99-078-84, 86, 87

Container I.D. No. SML-991 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: 6
7. Number of containers per sample: _____ (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 M. Goldenberg Date: 8-27-99 Time: 9:30

LOGIN

TNU W.O. No. _____ Group No. _____ Client W.O. No. _____

PROGRAM MANAGER

Sample holding times exceeded? Yes [ ] No [ ]

Client Notified: Name _____ Date/time _____

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

OCT 1999
RECEIVED
Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9908L906
SDG# : H0506
SAF# : B99-078

W.O. # : 10985-001-001-9999-00
Date Received: 08-27-99

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 8 soil 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 temperatures were recorded on the chain-of-custody.

5. The method blanks were within method criteria.

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

7. The matrix spike recoveries were within the 75-125% control limits. The matrix spike duplicates were within the 20% RPD control limit.

8. The replicate analyses were within the 20% RPD control limit with the exception of Chloride which was outside the limit.

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

10. Matrix quality control analyses were not performed for Total Cyanide and Ammonia. These analyses will be performed and data will be submitted as required by the client.

Pat E

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

9-29-99
Date

njp\i08-906

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 25 pages.

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

Recra LabNet Philadelphia

WET CHEMISTRY
METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	__		✓ ILMO4.0 (e)
% Volatile Soilids	__ 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	
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)
Oxygne Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		✓ 9045C	
Sulfide, Reactive		__ Section 7.3	
Sulfide		✓ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Prpearation Leach		__ 1312	
Paint Filter		9095A	

Other: Chloride, Fluoride, Nitrate, **Method:** EPA 300.0 (mod)

Other: Nitrite, Phosphate, Sulfate **Method**

Nitrate Nitrite EPA 353.2

Ammonia EPA 350.3

Recra LabNet Philadelphia
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.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 , RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0W6B0	% Solids	97.1		%	0.01	1.0
		Chloride by IC	2.3		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	1.3	u	MG/KG	1.3	1.0
		Nitrate by IC	4.6		MG/KG	2.6	1.0
		Cyanide, Total	0.52	u	MG/KG	0.52	1.0
		Phosphate by IC	1.3	u	MG/KG	1.3	1.0
		Chromium VI	0.41	u	MG/KG	0.41	1.0
		Sulfate by IC	15.7		MG/KG	1.3	1.0
		Nitrate Nitrite	0.66		MG/KG	0.20	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	8.9		SOIL PH	0.0	1.0
		Sulfide	4.0		MG/KG	1.0	1.0
-002	B0W699	% Solids	95.6		%	0.01	1.0
		Chloride by IC	1.4		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	1.3	u	MG/KG	1.3	1.0
		Nitrate by IC	12		MG/KG	2.6	1.0
		Cyanide, Total	0.52	u	MG/KG	0.52	1.0
		Phosphate by IC	1.3	u	MG/KG	1.3	1.0
		Chromium VI	0.42	u	MG/KG	0.42	1.0
		Sulfate by IC	73.2		MG/KG	5.2	4.0
		Nitrate Nitrite	4.1		MG/KG	0.21	1.0
		Ammonia, as N	1.3		MG/KG	1.3	1.0
		pH	8.6		SOIL PH	0.0	1.0
		Sulfide	1.0	u	MG/KG	1.0	1.0
-003	B0W697	% Solids	91.9		%	0.01	1.0
		Chloride by IC	2.1		MG/KG	1.4	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	1.4	u	MG/KG	1.4	1.0
		Nitrate by IC	42		MG/KG	2.7	1.0
		Cyanide, Total	0.54	u	MG/KG	0.54	1.0
		Phosphate by IC	1.4	u	MG/KG	1.4	1.0
		Chromium VI	0.44	u	MG/KG	0.44	1.0
		Sulfate by IC	462		MG/KG	27.2	20.0
		Nitrate Nitrite	8.9		MG/KG	0.22	1.0
		Ammonia, as N	4.4		MG/KG	1.3	1.0
		pH	7.5		SOIL PH	0.0	1.0

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INORGANICS DATA SUMMARY REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0W697	Sulfide	1.1 u	MG/KG	1.1	1.0
-004	B0W694	% Solids	68.2	%	0.01	1.0
		Chloride by IC	9.4	MG/KG	1.8	1.0
		Fluoride by IC	6.9	MG/KG	3.7	1.0
		Nitrite by IC	1.8 u	MG/KG	1.8	1.0
		Nitrate by IC	140	MG/KG	18	10
		Cyanide, Total	0.73 u	MG/KG	0.73	1.0
		Phosphate by IC	1.8 u	MG/KG	1.8	1.0
		Chromium VI	11.7 u	MG/KG	11.7	20.0
		Sulfate by IC	3640	MG/KG	91.6	50.0
		Nitrate Nitrite	33.8	MG/KG	1.5	5.0
		Ammonia, as N	75.6	MG/KG	1.8	1.0
		pH	3.9	SOIL PH	0.0	1.0
		Sulfide	1.5 u	MG/KG	1.5	1.0
-005	B0W692	% Solids	89.9	%	0.01	1.0
		Chloride by IC	3.6	MG/KG	1.4	1.0
		Fluoride by IC	2.8 u	MG/KG	2.8	1.0
		Nitrite by IC	1.4 u	MG/KG	1.4	1.0
		Nitrate by IC	64	MG/KG	5.6	4.0
		Cyanide, Total	0.56 u	MG/KG	0.56	1.0
		Phosphate by IC	1.4 u	MG/KG	1.4	1.0
		Chromium VI	0.44 u	MG/KG	0.44	1.0
		Sulfate by IC	1850	MG/KG	69.5	50.0
		Nitrate Nitrite	13.5	MG/KG	1.1	5.0
		Ammonia, as N	27.9	MG/KG	1.4	1.0
		pH	4.6	SOIL PH	0.0	1.0
		Sulfide	4.5	MG/KG	1.1	1.0
-006	B0W6B1	% Solids	95.7	%	0.01	1.0
		Chloride by IC	1.5	MG/KG	1.3	1.0
		Fluoride by IC	2.6 u	MG/KG	2.6	1.0
		Nitrite by IC	1.3 u	MG/KG	1.3	1.0
		Nitrate by IC	8.8	MG/KG	2.6	1.0
		Cyanide, Total	0.52 u	MG/KG	0.52	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	53.1	MG/KG	2.6	2.0
		Nitrate Nitrite	2.2	MG/KG	0.21	1.0

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INORGANICS DATA SUMMARY REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	B0W6B1	Ammonia, as N	1.6		MG/KG	1.3	1.0
		pH	8.5		SOIL PH	0.0	1.0
		Sulfide	3.9		MG/KG	1.0	1.0
-007	B0W693	% Solids	89.9		%	0.01	1.0
		Chloride by IC	3.0		MG/KG	1.4	1.0
		Fluoride by IC	2.8	u	MG/KG	2.8	1.0
		Nitrite by IC	1.4	u	MG/KG	1.4	1.0
		Nitrate by IC	65		MG/KG	5.2	4.0
		Cyanide, Total	0.56	u	MG/KG	0.56	1.0
		Phosphate by IC	1.4	u	MG/KG	1.4	1.0
		Chromium VI	0.44	u	MG/KG	0.44	1.0
		Sulfate by IC	1120		MG/KG	69.5	50.0
		Nitrate Nitrite	16.7		MG/KG	1.1	5.0
		Ammonia, as N	28.0		MG/KG	1.4	1.0
		pH	5.5		SOIL PH	0.0	1.0
		Sulfide	1.1	u	MG/KG	1.1	1.0
-008	B0W698	% Solids	96.2		%	0.01	1.0
		Chloride by IC	1.4		MG/KG	1.3	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	1.3	u	MG/KG	1.3	1.0
		Nitrate by IC	11		MG/KG	2.6	1.0
		Cyanide, Total	0.52	u	MG/KG	0.52	1.0
		Phosphate by IC	1.3	u	MG/KG	1.3	1.0
		Chromium VI	0.42	u	MG/KG	0.42	1.0
		Sulfate by IC	16.9		MG/KG	1.3	1.0
		Nitrate Nitrite	2.7		MG/KG	0.21	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	8.4		SOIL PH	0.0	1.0
		Sulfide	1.0	u	MG/KG	1.0	1.0

Recra LabNet - Lionville

INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LIC078-MB1	Chloride by IC	1.2	u	MG/KG	1.2	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	1.2	u	MG/KG	1.2	1.0
		Nitrate by IC	2.5	u	MG/KG	2.5	1.0
		Phosphate by IC	1.2	u	MG/KG	1.2	1.0
		Sulfate by IC	1.2	u	MG/KG	1.2	1.0
BLANK1	99LC099-MB1	Cyanide, Total	0.50	u	MG/KG	0.50	1.0
BLANK10	99LVI061-MB1	Chromium VI	0.40	u	MG/KG	0.40	1.0
BLANK10	99LN3B45-MB1	Nitrate Nitrite	0.20	u	MG/KG	0.20	1.0
BLANK10	99LAM034-MB1	Ammonia, as N	1.2	u	MG/KG	1.2	1.0
BLANK10	99LSD041-MB1	Sulfide	1.0	u	MG/KG	1.0	1.0
BLANK10	99LIC079-MB1	Nitrate by IC	1.2	u	MG/KG	1.2	1.0

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INORGANICS ACCURACY REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0W6B0	Chloride by IC	26.7	2.3	25.7	94.8	1.0
		Chloride by IC MSD	26.8	2.3	25.7	95.0	1.0
		Fluoride by IC	58.2	0.0	51.5	113.1	1.0
		Fluoride by IC MSD	58.2	0.0	51.5	113.1	1.0
		Nitrite by IC	27	1.3 u	26	105.6	1.0
		Nitrite by IC MSD	27	1.3 u	26	106.4	1.0
		Nitrate by IC	31	4.6	26	101.6	1.0
		Nitrate by IC MSD	31	4.6	26	101.7	1.0
		Phosphate by IC	26.7	1.3 u	25.7	103.6	1.0
		Phosphate by IC MSD	26.9	1.3 u	25.7	104.5	1.0
		Soluble Chromium VI	4.2	0.41u	4.1	105.4	1.0
		Insoluble Chromium VI	1240	0.41u	1180	105.3	100
		Sulfate by IC	42.6	15.7	25.7	104.8	1.0
		Sulfate by IC MSD	42.5	15.7	25.7	104.3	1.0
		Nitrate Nitrite	6.6	0.66	5.1	117.0	1.0
		Nitrate Nitrite MSD	6.5	0.66	5.1	114.2	1.0
-008	B0W698	Sulfide	365	0.0	402	91.0	1.0
		Sulfide MSD	337	0.0	358	94.0	1.0
BLANK10	99LIC078-MB1	Chloride by IC	23.7	1.2 u	25.0	94.7	1.0
		Fluoride by IC	52.7	2.5 u	50.0	105.4	1.0
		Nitrite by IC	24	1.2 u	25	98.0	1.0
		Nitrate by IC	24	2.5 u	25	97.3	1.0
		Phosphate by IC	25.6	1.2 u	25.0	102.5	1.0
		Sulfate by IC	23.7	1.2 u	25.0	94.7	1.0
BLANK10	99LVI061-MB1	Soluble Chromium VI	4.0	0.40u	4.0	99.0	1.0
		Insoluble Chromium VI	1120	0.40u	1160	96.1	100
BLANK10	99LN3B45-MB1	Nitrate Nitrite	5.1	0.20u	5.0	102.4	1.0
		Nitrate Nitrite MSD	5.2	0.20u	5.0	103.0	1.0
BLANK10	99LAM034-MB1	Ammonia, as N	53.2	1.2 u	50.0	106.5	1.0
		Ammonia, as N MSD	51.8	1.2 u	50.0	103.5	1.0
BLANK10	99LSD041-MB1	Sulfide	10.0	1.0 u	10.0	100	1.0
		Sulfide MSD	9.1	1.0 u	10.0	91.0	1.0
BLANK10	99LIC079-MB1	Nitrate by IC	24	1.2 u	25	98.0	1.0

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INORGANICS DUPLICATE SPIKE REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	B0W6B0	Chloride by IC	94.8	95.0	0.25
		Fluoride by IC	113.1	113.1	0.026
		Nitrite by IC	105.6	106.4	0.71
		Nitrate by IC	101.6	101.7	0.16
		Phosphate by IC	103.6	104.5	0.84
		Sulfate by IC	104.8	104.3	0.50
		Nitrate Nitrite	117.0	114.2	2.4
-008	B0W698	Sulfide	91.0	94.0	3.2
BLANK10	99LN3B45-MB1	Nitrate Nitrite	102.4	103.0	0.58
BLANK10	99LAM034-MB1	Ammonia, as N	106.5	103.5	2.9
BLANK10	99LSD041-MB1	Sulfide	100	91.0	9.4

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INORGANICS PRECISION REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0W6B0	% Solids	97.1	96.8	0.32	1.0
		Chloride by IC	2.3	1.3	53.4	1.0
		Fluoride by IC	2.6 u	2.6 u	NC	1.0
		Nitrite by IC	1.3 u	1.3 u	NC	1.0
		Nitrate by IC	4.6	4.6	1.6	1.0
		Phosphate by IC	1.3 u	1.3 u	NC	1.0
		Chromium VI	0.41u	0.41u	NC	1.0
		Sulfate by IC	15.7	15.3	2.3	1.0
		Nitrate Nitrite	0.66	0.95	35.2	1.0
-008REP	B0W698	pH	8.4	8.4	0.0	1.0
		Sulfide	1.0 u	1.0 u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/29/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99LC099-LC1	Cyanide, Total LCS	1.9	2.0	MG/KG	93.5
LCS2	99LC099-LC2	Cyanide, Total LCS	9.5	10	MG/KG	94.8

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0						
% SOLIDS	001	S	99L%0120	08/25/99	09/01/99	09/02/99
% SOLIDS	001 REP	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
CHLORIDE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
CHLORIDE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
CHLORIDE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
TOTAL CYANIDE	001	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	001	S	99LVI061	08/25/99	09/07/99	09/07/99
CHROMIUM VI	001 REP	S	99LVI061	08/25/99	09/07/99	09/07/99
CHROMIUM VI	001 MS	S	99LVI061	08/25/99	09/07/99	09/07/99
CHROMIUM VI	001 MSD	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	001	S	99LIC078	08/25/99	09/21/99	09/21/99
SULFATE BY IC	001 REP	S	99LIC078	08/25/99	09/21/99	09/21/99
SULFATE BY IC	001 MS	S	99LIC078	08/25/99	09/21/99	09/21/99
SULFATE BY IC	001 MSD	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	001	S	99LN3B45	08/25/99	09/16/99	09/17/99
NITRATE NITRITE	001 REP	S	99LN3B45	08/25/99	09/16/99	09/17/99
NITRATE NITRITE	001 MS	S	99LN3B45	08/25/99	09/16/99	09/17/99
NITRATE NITRITE	001 MSD	S	99LN3B45	08/25/99	09/16/99	09/17/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
AMMONIA	001	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	001	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	001	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W699						
% SOLIDS	002	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
TOTAL CYANIDE	002	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	002	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	002	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	002	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	002	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	002	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	002	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W697						
% SOLIDS	003	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
TOTAL CYANIDE	003	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	003	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	003	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	003	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	003	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	003	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	003	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W694						
% SOLIDS	004	S	99L%0120	08/25/99	09/01/99	09/02/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	004	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	004	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	004	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	004	S	99LIC079	08/25/99	09/23/99	09/23/99
TOTAL CYANIDE	004	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	004	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	004	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	004	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	004	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	004	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	004	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	004	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W692						
% SOLIDS	005	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	005	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	005	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	005	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	005	S	99LIC079	08/25/99	09/23/99	09/23/99
TOTAL CYANIDE	005	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	005	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	005	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	005	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	005	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	005	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	005	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	005	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W6B1						
% SOLIDS	006	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99
TOTAL CYANIDE	006	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	006	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	006	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	006	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	006	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	006	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	006	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W693						
% SOLIDS	007	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	007	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	007	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	007	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	007	S	99LIC079	08/25/99	09/23/99	09/23/99
TOTAL CYANIDE	007	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	007	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	007	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	007	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	007	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	007	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	007	S	99LPH099	08/25/99	09/15/99	09/15/99
SULFIDE	007	S	99LSD041	08/25/99	09/01/99	09/01/99
B0W698						
% SOLIDS	008	S	99L%0120	08/25/99	09/01/99	09/02/99
CHLORIDE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
FLUORIDE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRITE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
TOTAL CYANIDE	008	S	99LC099	08/25/99	09/06/99	09/06/99
PHOSPHATE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
CHROMIUM VI	008	S	99LVI061	08/25/99	09/07/99	09/07/99
SULFATE BY IC	008	S	99LIC078	08/25/99	09/21/99	09/21/99
NITRATE NITRITE	008	S	99LN3B45	08/25/99	09/16/99	09/17/99
AMMONIA	008	S	99LAM034	08/25/99	09/14/99	09/14/99
PH	008	S	99LPH099	08/25/99	09/15/99	09/15/99
PH	008 REP	S	99LPH099	08/25/99	09/15/99	09/15/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFIDE	008	S	99LSD041	08/25/99	09/01/99	09/01/99
SULFIDE	008 REP	S	99LSD041	08/25/99	09/01/99	09/01/99
SULFIDE	008 MS	S	99LSD041	08/25/99	09/01/99	09/01/99
SULFIDE	008 MSD	S	99LSD041	08/25/99	09/01/99	09/01/99

LAB QC:

CHLORIDE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
CHLORIDE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
FLUORIDE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
FLUORIDE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRITE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
NITRITE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
TOTAL CYANIDE	LC1 L	S	99LC099	N/A	09/06/99	09/06/99
TOTAL CYANIDE	LC2 L	S	99LC099	N/A	09/06/99	09/06/99
TOTAL CYANIDE	MB1	S	99LC099	N/A	09/06/99	09/06/99
PHOSPHATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
PHOSPHATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
CHROMIUM VI	MB1	S	99LVI061	N/A	09/07/99	09/07/99
CHROMIUM VI	MB1 BS	S	99LVI061	N/A	09/07/99	09/07/99
CHROMIUM VI	MB1 BSD	S	99LVI061	N/A	09/07/99	09/07/99
SULFATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
SULFATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE NITRITE	MB1	S	99LN3B45	N/A	09/17/99	09/17/99
NITRATE NITRITE	MB1 BS	S	99LN3B45	N/A	09/17/99	09/17/99
NITRATE NITRITE	MB1 BSD	S	99LN3B45	N/A	09/17/99	09/17/99
AMMONIA	MB1	S	99LAM034	N/A	09/14/99	09/14/99
AMMONIA	MB1 BS	S	99LAM034	N/A	09/14/99	09/14/99
AMMONIA	MB1 BSD	S	99LAM034	N/A	09/14/99	09/14/99
SULFIDE	MB1	S	99LSD041	N/A	09/01/99	09/01/99
SULFIDE	MB1 BS	S	99LSD041	N/A	09/01/99	09/01/99
SULFIDE	MB1 BSD	S	99LSD041	N/A	09/01/99	09/01/99
NITRATE BY IC	MB1	S	99LIC079	N/A	09/23/99	09/23/99
NITRATE BY IC	MB1 BS	S	99LIC079	N/A	09/23/99	09/23/99

RECRA LabNet Use Only
99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) perrone wet lab

Client: TNU - Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6	1					6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1					500		250	ur				
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
RECRA LabNet Use Only		06Z4H	06Z5H	06PCB	~~8/27/99~~ 06GCSC	06RO			metal		1 PH	inorg				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN					
10021	B0W6B0			S	8/25/99	1103	X	X	X		X	X		X		X	X			
2	99					1051														
3	97					1004														
4	94					0926														
5	~~B1~~ 92					0845														
6	~~93~~ B1					1118														
7	~~98~~ 93					0909														
8	98					1032														
						Run matrix QC														

Special Instructions:

Saf # B99-078

~~8/20/99 IN3N2 cancelled Unit Revision~~

8/31/99

COMPOSITE WASTE

DATE/REVISIONS:

1. Met = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICRG
3. Anions = ~~IN3N2~~ IN3N2, ICCL, ICFL, ICNO2, ICNO3,
4. ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGCSC = ethanol + propanol

8/31/99

*4253379528750 - 4.2°C, *42357952 ~~8749~~ - 5.1°C *4476545931 - 3.8°C

RECRA LabNet Use Only

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

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

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
Cooler temp = 4.2°, 5.1°, 3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

9908L906

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 2 / 8-25-99

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
301 B0W6B0	Soil / 8/25/99 / 11:03						X	X	X	X	X
										BOWSM1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Pat	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFGIB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Superfrate) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 201-21	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions
Sample No.	Matrix * / Sample Date / Sample Time										
302 B0W699	Soil / 8/25/99 / 10:51						X	X	X	X	X
										Bowers	M

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter — Date/Time: 8/25/99/1410	Received By: Peter JB — Date/Time: 8/25/99/1410		
Relinquished By: RFG LB — Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris — Date/Time: 8/26/99 11:00		
Relinquished By: CTRICE/Chris — Date/Time: 8/26/99 14:00	Received By: FEDEX — Date/Time:		
Relinquished By: Fed Ex — Date/Time: 8-27-99/0930	Received By: D. Smith — Date/Time: 8-27-99/0930		
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15'-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix *	Sample Date	Sample Time								
303 B0W697	Soil	8/25/99	10:04						X	X	X	X	X
											Dup

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/CTrice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/CTrice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8/27/99/0930	Received By: D Agnew	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 14'-15'		SAF No. B99-078		
Ice Chest No. ETC-96059	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To ~~TMA~~/RECRA 078 8-25-99	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		
			COA B20CW1 671C		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No. / Matrix * / Sample Date / Sample Time										
004 B0W694 / Soil / 8/25/99 / 09:26			X	X	X	X	X	~~X~~	BOW694	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Bof 1-B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R Fahlberg / R Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 10' - 11'		SAF No. B99-078		
Ice Chest No. ERC 96 059	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To ~~TMA~~/RECRA BJD 8-25-99	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		
			COA B20W1-671C		

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
305 B0W692	Soil	8/25/99	08:45			X	X	X	X	X		B0W692	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By Peter J-B	Date/Time 8-26-99 0800	Received By R. Fahlberg / R. Fahlberg	Date/Time 0800 8-26-99
Relinquished By R. Fahlberg / R. Fahlberg	Date/Time 1400 8-26-99	Received By FED Ex	Date/Time
Relinquished By Fed Ex	Date/Time 8-27-99/0930	Received By D. Amen	Date/Time 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: ERC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~A7~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix * / Sample Date / Sample Time										
006 B0W6B1	Soil / 8/25/99 / 11:18						X	X	X	X	X
									Bowers		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Price Code 8N	Data Turnaround 45 Days		
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 12.5'-13.5'		SAF No. B99-078
Ice Chest No. ERC-96-051	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To ~~TMA~~/RECRA 8-27-99	Offsite Property No. A990230		Bill of Lading/Air Bill No. 4235 7952 8750
			COA B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix * / Sample Date / Sample Time										
207 B0W693	Soil / 8/25/99 / 09:09			X	X	X	X	X		B0W3M0	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Refer JB	Date/Time 8/25/99/1410
Relinquished By Ref JB	Date/Time 8.26.99 0800	Received By R.Felling/R.Felling	Date/Time 0800 8.26.99
Relinquished By R.Felling/R.Felling	Date/Time 1400 8.26.99	Received By Fed Ex	Date/Time
Relinquished By Fed Ex	Date/Time 8.27.99/0930	Received By [illegible]	Date/Time 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5		SAF No.: B99-078
Ice Chest No.: ERC 96-051	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8750
			COA: B20CW1 + B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
008 B0W698	Soil	8/25/99	10:32						X	X	X	X	X
												B0W5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99 1410	Received By: Peter JB	Date/Time: 8/25/99 1410
Relinquished By: Peter J.B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 0800
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99 0930	Received By: D. Johnston	Date/Time: 8-27-99 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign coc

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

OCT 1999
RECEIVED
Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9908L906
SDG/SAF# : B99-078/H0506

W.O.# : 10985-001-001-9999-00
Date Received: 08-27-99

METALS CASE NARRATIVE

1. This narrative covers the analyses of 8 soil samples.

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

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

4. All cooler temperatures have 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) 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 laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. The matrix spike (MS) recovery for Nickel was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B0W6B0	Nickel	500	105.6

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 26 pages.

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12. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

9-28-99
Date

mld/m08-906

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 9908L906

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050A __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-03/98

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

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0W6B0	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	1.7	MG/KG	0.28	1.0
		Barium, Total	47.7	MG/KG	0.03	1.0
		Beryllium, Total	0.12	MG/KG	0.009	1.0
		Cadmium, Total	0.09	MG/KG	0.03	1.0
		Chromium, Total	6.3	MG/KG	0.07	1.0
		Copper, Total	10.4	MG/KG	0.10	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	15.9	MG/KG	0.10	1.0
		Lead, Total	2.7	MG/KG	0.18	1.0
		Selenium, Total	0.31 u	MG/KG	0.31	1.0
		Vanadium, Total	27.7	MG/KG	0.05	1.0
		Zinc, Total	28.2	MG/KG	0.07	1.0
-002	B0W699	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.9	MG/KG	0.29	1.0
		Barium, Total	55.3	MG/KG	0.03	1.0
		Beryllium, Total	0.18	MG/KG	0.008	1.0
		Cadmium, Total	0.07	MG/KG	0.03	1.0
		Chromium, Total	4.8	MG/KG	0.07	1.0
		Copper, Total	12.3	MG/KG	0.10	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	6.5	MG/KG	0.10	1.0
		Lead, Total	3.5	MG/KG	0.18	1.0
		Selenium, Total	0.32 u	MG/KG	0.32	1.0
		Vanadium, Total	37.7	MG/KG	0.05	1.0
		Zinc, Total	37.9	MG/KG	0.07	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0W697	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	3.0	MG/KG	0.32	1.0
		Barium, Total	80.3	MG/KG	0.03	1.0
		Beryllium, Total	0.18	MG/KG	0.009	1.0
		Cadmium, Total	0.22	MG/KG	0.03	1.0
		Chromium, Total	5.9	MG/KG	0.08	1.0
		Copper, Total	14.7	MG/KG	0.12	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	8.7	MG/KG	0.12	1.0
		Lead, Total	4.5	MG/KG	0.21	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
		Vanadium, Total	47.3	MG/KG	0.06	1.0
		Zinc, Total	50.1	MG/KG	0.08	1.0
-004	B0W694	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	7.6	MG/KG	0.45	1.0
		Barium, Total	115	MG/KG	0.04	1.0
		Beryllium, Total	0.21	MG/KG	0.01	1.0
		Cadmium, Total	1.7	MG/KG	0.04	1.0
		Chromium, Total	24.3	MG/KG	0.11	1.0
		Copper, Total	58.8	MG/KG	0.16	1.0
		Mercury, Total	0.24	MG/KG	0.02	1.0
		Nickel, Total	11.3	MG/KG	0.16	1.0
		Lead, Total	35.5	MG/KG	0.29	1.0
		Selenium, Total	1.5	MG/KG	0.51	1.0
		Vanadium, Total	60.4	MG/KG	0.08	1.0
		Zinc, Total	204	MG/KG	0.11	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B0W692	Silver, Total	0.11 u	MG/KG	0.11	1.0
		Arsenic, Total	1.9	MG/KG	0.23	1.0
		Barium, Total	73.7	MG/KG	0.02	1.0
		Beryllium, Total	0.13	MG/KG	0.01	1.0
		Cadmium, Total	0.51	MG/KG	0.02	1.0
		Chromium, Total	8.3	MG/KG	0.05	1.0
		Copper, Total	15.3	MG/KG	0.08	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.4	MG/KG	0.08	1.0
		Lead, Total	5.5	MG/KG	0.14	1.0
		Selenium, Total	0.25 u	MG/KG	0.25	1.0
		Vanadium, Total	56.5	MG/KG	0.04	1.0
		Zinc, Total	82.1	MG/KG	0.05	1.0
-006	B0W6B1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.2	MG/KG	0.29	1.0
		Barium, Total	44.3	MG/KG	0.03	1.0
		Beryllium, Total	0.15	MG/KG	0.008	1.0
		Cadmium, Total	0.08	MG/KG	0.03	1.0
		Chromium, Total	5.5	MG/KG	0.07	1.0
		Copper, Total	12.3	MG/KG	0.11	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Nickel, Total	6.7	MG/KG	0.11	1.0
		Lead, Total	2.9	MG/KG	0.19	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
		Vanadium, Total	40.5	MG/KG	0.05	1.0
		Zinc, Total	35.0	MG/KG	0.07	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B0W693	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	2.0	MG/KG	0.32	1.0
		Barium, Total	73.2	MG/KG	0.03	1.0
		Beryllium, Total	0.19	MG/KG	0.01	1.0
		Cadmium, Total	0.50	MG/KG	0.03	1.0
		Chromium, Total	8.4	MG/KG	0.08	1.0
		Copper, Total	15.2	MG/KG	0.12	1.0
		Mercury, Total	0.02	MG/KG	0.01	1.0
		Nickel, Total	8.4	MG/KG	0.12	1.0
		Lead, Total	5.7	MG/KG	0.20	1.0
		Selenium, Total	0.35 u	MG/KG	0.35	1.0
		Vanadium, Total	54.7	MG/KG	0.06	1.0
		Zinc, Total	82.4	MG/KG	0.08	1.0
-008	B0W698	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.5	MG/KG	0.30	1.0
		Barium, Total	38.6	MG/KG	0.03	1.0
		Beryllium, Total	0.13	MG/KG	0.008	1.0
		Cadmium, Total	0.08	MG/KG	0.03	1.0
		Chromium, Total	3.6	MG/KG	0.07	1.0
		Copper, Total	13.2	MG/KG	0.11	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Nickel, Total	7.3	MG/KG	0.11	1.0
		Lead, Total	2.8	MG/KG	0.19	1.0
		Selenium, Total	0.34 u	MG/KG	0.34	1.0
		Vanadium, Total	45.5	MG/KG	0.05	1.0
		Zinc, Total	38.3	MG/KG	0.07	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L0638-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
BLANK1	99L0624-MB1	Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	0.12	MG/KG	0.03	1.0
		Cadmium, Total	0.03 u	MG/KG	0.03	1.0
		Chromium, Total	0.10	MG/KG	0.08	1.0
		Copper, Total	0.12 u	MG/KG	0.12	1.0
		Nickel, Total	0.12 u	MG/KG	0.12	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
		Vanadium, Total	0.06 u	MG/KG	0.06	1.0
		Zinc, Total	0.11	MG/KG	0.08	1.0
BLANK1	99C0256-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0W6B0	Silver, Total	4.5	0.09u	4.9	91.8	1.0
		Arsenic, Total	159	1.7	166	94.6	1.0
		Barium, Total	205	47.7	166	94.6	1.0
		Beryllium, Total	4.5	0.12	4.9	89.4	1.0
		Cadmium, Total	3.9	0.09	4.2	90.7	1.0
		Chromium, Total	20.3	6.3	16.6	84.3	1.0
		Copper, Total	30.3	10.4	20.8	95.7	1.0
		Mercury, Total	0.16	0.02u	0.16	100	1.0
		Nickel, Total	43.5	15.9	41.6	66.3	1.0
		Lead, Total	41.7	2.7	41.6	93.8	1.0
		Selenium, Total	154	0.31u	166	92.7	1.0
		Vanadium, Total	68.3	27.7	41.6	97.6	1.0
		Zinc, Total	65.4	28.2	41.6	89.4	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0W6B0	Silver, Total	0.09u	0.08u	NC	1.0
		Arsenic, Total	1.7	1.8	5.7	1.0
		Barium, Total	47.7	45.8	4.1	1.0
		Beryllium, Total	0.12	0.15	20.9	1.0
		Cadmium, Total	0.09	0.05	52.2	1.0
		Chromium, Total	6.3	5.1	21.1	1.0
		Copper, Total	10.4	10.6	1.9	1.0
		Mercury, Total	0.02u	0.01u	NC	1.0
		Nickel, Total	15.9	5.7	94.4	1.0
		Lead, Total	2.7	2.5	7.7	1.0
		Selenium, Total	0.31u	0.33u	NC	1.0
		Vanadium, Total	27.7	23.4	16.8	1.0
		Zinc, Total	28.2	27.7	1.8	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 09/28/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L906

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L0638-LC1	Silver, LCS	48.9	50.0	MG/KG	97.8
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
LCS1	99L0624-LC1	Arsenic, LCS	965	1000	MG/KG	96.5
		Barium, LCS	488	500	MG/KG	97.5
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Chromium, LCS	49.2	50.0	MG/KG	98.4
		Copper, LCS	122	125	MG/KG	97.6
		Nickel, LCS	191	200	MG/KG	95.6
		Lead, LCS	243	250	MG/KG	97.2
		Selenium, LCS	940	1000	MG/KG	94.0
		Vanadium, LCS	249	250	MG/KG	99.7
		Zinc, LCS	96.1	100	MG/KG	96.1
LCS1	99C0256-LC1	Mercury, LCS	0.96	1.0	MG/KG	96.0

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0						
SILVER, TOTAL	001	S	99L0638	08/25/99	09/22/99	09/23/99
SILVER, TOTAL	001 REP	S	99L0638	08/25/99	09/22/99	09/23/99
SILVER, TOTAL	001 MS	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
ARSENIC, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
ARSENIC, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	001	S	99L0638	08/25/99	09/22/99	09/23/99
BERYLLIUM, TOTAL	001 REP	S	99L0638	08/25/99	09/22/99	09/23/99
BERYLLIUM, TOTAL	001 MS	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
CADMIUM, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
CADMIUM, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	001	S	99C0256	08/25/99	08/30/99	08/30/99
MERCURY, TOTAL	001 REP	S	99C0256	08/25/99	08/30/99	08/30/99
MERCURY, TOTAL	001 MS	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
NICKEL, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
NICKEL, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	001	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	001 REP	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	001 MS	S	99L0624	08/25/99	09/14/99	09/15/99
B0W699						
SILVER, TOTAL	002	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	002	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	002	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	002	S	99L0624	08/25/99	09/14/99	09/15/99
B0W697						
SILVER, TOTAL	003	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	003	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	003	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	003	S	99L0624	08/25/99	09/14/99	09/15/99
B0W694						
SILVER, TOTAL	004	S	99L0638	08/25/99	09/22/99	09/23/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	004	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	004	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	004	S	99L0624	08/25/99	09/14/99	09/15/99
B0W692						
SILVER, TOTAL	005	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	005	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	005	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	005	S	99L0624	08/25/99	09/14/99	09/15/99
B0W6B1						
SILVER, TOTAL	006	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	006	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	006	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	006	S	99L0624	08/25/99	09/14/99	09/15/99
B0W693						
SILVER, TOTAL	007	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	007	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	007	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	007	S	99L0624	08/25/99	09/14/99	09/15/99
B0W698						
SILVER, TOTAL	008	S	99L0638	08/25/99	09/22/99	09/23/99
ARSENIC, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
BARIUM, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
BERYLLIUM, TOTAL	008	S	99L0638	08/25/99	09/22/99	09/23/99
CADMIUM, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
CHROMIUM, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
COPPER, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
MERCURY, TOTAL	008	S	99C0256	08/25/99	08/30/99	08/30/99
NICKEL, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
LEAD, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
SELENIUM, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
VANADIUM, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99
ZINC, TOTAL	008	S	99L0624	08/25/99	09/14/99	09/15/99

LAB QC:

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER LABORATORY	LC1 BS	S	99L0638	N/A	09/22/99	09/23/99
SILVER, TOTAL	MB1	S	99L0638	N/A	09/22/99	09/23/99
ARSENIC LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
ARSENIC, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
BARIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
BARIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
BERYLLIUM LABORATORY	LC1 BS	S	99L0638	N/A	09/22/99	09/23/99
BERYLLIUM, TOTAL	MB1	S	99L0638	N/A	09/22/99	09/23/99
CADMIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
CADMIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
CHROMIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
CHROMIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
COPPER LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
COPPER, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
MERCURY LABORATORY	LC1 BS	S	99C0256	N/A	08/30/99	08/30/99
MERCURY, TOTAL	MB1	S	99C0256	N/A	08/30/99	08/30/99
NICKEL LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
NICKEL, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
LEAD LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
LEAD, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
SELENIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
SELENIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
VANADIUM LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
VANADIUM, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99
ZINC LABORATORY	LC1 BS	S	99L0624	N/A	09/14/99	09/15/99
ZINC, TOTAL	MB1	S	99L0624	N/A	09/14/99	09/15/99

RECRA LabNet Use Only: 99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) ~~Perform wet lab~~ All

Client: INU - Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6	1					6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1					500		250	4oz				
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
RECRA LabNet Use Only		8260 24H	8270 25H	8081 PCB	~~8260~~ OGCSC	8015 OGLO			met(1)		1 PH	Anion(1)				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
S - Soil	0001	BOW6B0			S	8/25/99	1103	X	X	X		X	X		X		X	X		
SE - Sediment	2	99					1051													
SO - Solid	3	97					1004													
SL - Sludge	4	94					0926													
W - Water	5	~~B1~~ 92					0845													
O - Oil	6	~~93~~ B1					1118													
A - Air	7	~~98~~ 93					0909													
DS - Drum Solids	8	98					1032													
DL - Drum Liquids																				
L - EP/TCLP Leachate							Run	matrix	QC											
Wi - Wipe																				
X - Other																				
F - Fish																				

BATCH WASTE

Special Instructions:

SAF # B99-078

9/21/99 Waste Code changed to Batch waste

~~8/20/99 IN3N2 cancelled~~

8/9/21/99

~~COMPOSITE WASTE~~

BATCH WASTE

DATE/REVISIONS:

met(1) = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICR6
Anion(1) = ~~IN3N2~~ IN3N2, ICCL, ICFL, ICNO2, ICNO3,
8/20/99 4. ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGCSC = ethanol + propanol

*4253795287 50-4.2°C, *42357952 ~~8749~~ 5.1°C *4476545931-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson	8/27/99	0930
	Lot DS		

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

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

RECRA LabNet Use Only

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

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

018

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA RJB 8.25.99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
B0W6B0	Soil / 8/25/99 / 11:03						X	X	X	X	X
										BOW5M1	

001

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: Brent Porter — Date/Time: 8/25/99/1410	Received By: Peter JB — Date/Time: 8/25/99/1410	
Relinquished By: RFG JB — Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris — Date/Time: 8/26/99 11:00	
Relinquished By: CTRICE/Chris — Date/Time: 8/26/99 14:00	Received By: FEDEX — Date/Time:	
Relinquished By: FedEx — Date/Time: 8.27.99/0930	Received By: D Smith — Date/Time: 8.27.99/0930	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

019

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 20' - 21'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
302 B0W699	Soil / 8/25/99 / 10:51						X	X	X	X	X
										Dowg	M

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter — Date/Time: 8/25/99/1410	Received By: Peter JB — Date/Time: 8/25/99/1410		
Relinquished By: RFB JB — Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris — Date/Time: 8/26/99 11:00		
Relinquished By: CTRICE/Chris — Date/Time: 8/26/99 14:00	Received By: FEDEX — Date/Time:		
Relinquished By: Fed Ex — Date/Time: 8-27-99/0930	Received By: D. Smith — Date/Time: 8-27-99/0930		
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

020

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
303 B0W697	Soil / 8/25/99 / 10:04						X	X	X	X	X
										Dup 541	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter — Date/Time: 8/25/99 1410	Received By: Peter JB — Date/Time: 8/25/99 1410		
Relinquished By: RFG 1B — Date/Time: 8/26/99 11:00	Received By: CTRICE/Chrice — Date/Time: 8/26/99 11:00		
Relinquished By: CTRICE/Chrice — Date/Time: 8/26/99 14:00	Received By: FEDEX — Date/Time:		
Relinquished By: D. Fed Ex — Date/Time: 8/27/99 0930	Received By: D. Armstrong — Date/Time: 8/27/99 0930		
LABORATORY SECTION — Received By	Title	Date/Time	
FINAL SAMPLE DISPOSITION — Disposal Method	Disposed By	Date/Time	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

3-22-99

021

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'		SAF No.: B99-078
Ice Chest No.: ETC-96059	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A
			COA: B20CW1 67IC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No. / Matrix * / Sample Date / Sample Time										
004 B0W694 / Soil / 8/25/99 / 09:26			X	X	X	X	X	X	B0W5Y2	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter IB	Date/Time: 8/25/99/1410
Relinquished By: Bob IB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R Fahlberg	Date/Time: 8-26-99 0800
Relinquished By: R Fahlberg / R Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

022

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 10' - 11'		SAF No.: B99-078
Ice Chest No.: RC 96 059	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 010 8-25-99	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A
			COA: B20CW1-671C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix * / Sample Date / Sample Time										
205 B0W692	Soil / 8/25/99 / 08:45			X	X	X	X	X		B0W569	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Brent Porter	8/25/99/1410	Refer JB	8/25/99/1410
Ref J-B	8.26.99 0800	R. Fahlberg / R. Fahlberg	8.26.99 0800
R. Fahlberg / R. Fahlberg	8.26.99 1400	FED Ex	
Fed Ex	8.27.99/0930	D. Amaro	8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

023

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~A7~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
006 B0W6B1	Soil	8/25/99	11:18						X	X	X	X	X
											Bow 5M		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: [signature]	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not availible to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

024

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 12.5'-13.5'	SAF No.: B99-078	
Ice Chest No.: ERC-96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~LMA~~/RECRA 8.27.99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (I-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
007 B0W693	Soil	8/25/99	09:09			X	X	X	X	X		Dow 140	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter JB	Date/Time: 8.26.99 0800	Received By: R. Fellows / R. Fellows	Date/Time: 0800 8.26.99
Relinquished By: R. Fellows / R. Fellows	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: [signature]	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

025

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96.051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 + B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
008 B0W698	Soil / 8/25/99 / 10:32						X	X	X	X	X
										B0W5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter J.B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99 / 0930	Received By: D. Johnson	Date/Time: 8-27-99 / 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

026

RECRA
ENVIRONMENTAL
INC.
Chemical and Environmental Measurement Information

OCT 1999
RECEIVED
Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9908L906
SDG/SAF#: H0506/B99-078

W.O #: 10985-001-001-9999-00
Date Received: 08-27-99

DIESEL RANGE ORGANICS

The set of samples consisted of eight (8) soil samples collected on 08-25-99.

The samples and their associated QC samples were prepared on 08-31-99 and analyzed by methodology based on EPA Method 8015B for Diesel Range Petroleum Hydrocarbons on 09-16,17-99. The analysis met the intent of method WTPH-D.

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

2. All required holding times for extraction and analysis were met.

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

4. All diesel continuing calibration standards analyzed prior to the sample extracts were within acceptance criteria.

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. Sample B0W694 contained contamination beyond (heavier) the diesel range with estimated concentrations of 21 mg/kg.

Pat E

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

9-27-99
Date

R:\SHARE\LC\GCSCAN\08-906d.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 13 pages.

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

GLOSSARY OF DIESEL DATA

DATA QUALIFIERS

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

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP	=	Indicates spiked compound.

Recra LabNet - Lionville Laboratory

DIESEL RANGE ORGANICS BY GC

Report Date: 09/20/99 11:44

RFW Batch Number: **9908L906** Client: **TNU-HANFORD B99-078** Work Order: **10985-001-001-9999-00** Page: 1

003

	Cust ID:	B0W6B0	B0W6B0	B0W6B0	B0W699	B0W697	B0W694
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Surrogate:	p-Terphenyl	53 %	88 %	75 %	76 %	60 %	62 %
Diesel Range Organics		4.0 U	76 %	78 %	4.1 U	4.3 U	5.8 U

	Cust ID:	B0W692	B0W6B1	B0W693	B0W698	BLK	BLK BS
Sample Information	RFW#:	005	006	007	008	99LE1062-MB1	99LE1062-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Surrogate:	p-Terphenyl	89 %	93 %	67 %	67 %	69 %	73 %
Diesel Range Organics		4.4 U	4.0 U	4.3 U	4.1 U	4.0 U	72 %

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

9/20/99

CC 9/24/99

Recra LabNet - Lionville Laboratory
DRO ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0	001	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W6B0	001 MS	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W6B0	001 MSD	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W699	002	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W697	003	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W694	004	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W692	005	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W6B1	006	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W693	007	S	99LE1062	08/25/99	08/31/99	09/17/99
B0W698	008	S	99LE1062	08/25/99	08/31/99	09/17/99

LAB QC:

BLK	MB1	S	99LE1062	N/A	08/31/99	09/16/99
BLK	MB1 BS	S	99LE1062	N/A	08/31/99	09/16/99

CQ 9/24/99

RECRA LabNet Use Only
99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU - Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: CJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6	1					6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1					500		250	125				
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	RECRA LabNet Use Only: 8260 24H	8270 25H	OPCB	~~8260~~ OGCSC	ODRO	metal		1 PH	Anions
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	0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X	X	X	X
	2	99					1051									
	3	97					1004									
	4	94					0926									
	5	~~B1~~ 92 8/27/99					0845									
	6	~~93~~ B1					1118									
	7	~~98~~ 93					0909									
	8	98					1032									
							Run matrix QC									

Special Instructions:

saf # B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. met① = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICR6
3. Anig① = 1N3N2, 1CCL, 1CFL, 1CNO2, 1CNO3,
4. 1CPO4, 1CSO4, 1SFD, 1NH3N, 1CNTO
5. OGCSC = ethanol + propanol

*4253795287 50-4.2°C, *4235795287 49-5.1°C *4476545931-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

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

RECRA LabNet Use Only

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

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

9488L986

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'		SAF No.: B99-078
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8749
			COA: B20CW1-671C

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

	Sample No.	Matrix *	Sample Date	Sample Time										
001	B0W6B0	Soil	8/25/99	11:03						X	X	X	X	X
													BOW5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RF6 JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Superfrate) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 23'-27'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time								
302 B0W699	Soil	8/25/99	10:51						X	X	X	X	X
												Bowers/N

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFB JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15'-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
303 B0W697	Soil	8/25/99	10:04						X	X	X	X	X
												Dup (1)	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RF6 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/CArice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/CArice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8/27/99/0930	Received By: D Smith	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'	SAF No.: B99-078	
Ice Chest No.: ETC-96059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 0700 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

	Sample No.	Matrix *	Sample Date	Sample Time										
004	B0W694	Soil	8/25/99	09:26			X	X	X	X	X		BOW694	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter IB	Date/Time: 8/25/99/1410
Relinquished By: Peter I-B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 10'-11'	SAF No.: B99-078	
Ice Chest No.: RC 96 059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 810 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
305 B0W692	Soil	8/25/99	08:45			X	X	X	X	X		B0W5L9

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Amaro	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~NA~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix * / Sample Date / Sample Time										
006 B0W6B1	Soil / 8/25/99 / 11:18						X	X	X	X	X
									Bow 5M		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: [signature]	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 12.5'-13.5'	SAF No.: B99-078	
Ice Chest No.: ERC-96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 8-26-99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
Special Handling and/or Storage	No. of Container(s)	1	1	1	1	1	1	1	1		
	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
007 B0W693	Soil	8/25/99	09:09			X	X	X	X	X		Bowers

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8.26.99 0800	Received By: R. Fellows / R. Fellows	Date/Time: 0800 8.26.99
Relinquished By: R. Fellows / R. Fellows	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: [illegible]	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 + B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
008 B0W698	Soil	8/25/99	10:32						X	X	X	X	X
												Dow5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99 1440	Received By: Peter JB	Date/Time: 8/25/99 1440
Relinquished By: Peter J.B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99 0930	Received By: D. Johnston	Date/Time: 8-27-99 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign coc

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-078
RFW#: 9908L906
SDG/SAF#: H0506/B99-078

W.O.#: 10985-001-001-9999-00
Date Received: 08-27-99

PCB

The set of samples consisted of eight (8) soil samples collected on 08-25-99.

The samples and their associated QC samples were extracted on 09-07-99 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 09-23,24-99. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

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

1. All cooler temperatures have been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The samples and their associated QC samples received a sulfuric acid and a sulfur cleanup
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. The blank spike recovery was within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

by J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

09-30-99
Date

OCT 1999
RECEIVED
Data
Log In

pefr:\group\data\pest\08L-906.pcb

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

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

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

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

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P	=	This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.

Recra LabNet - Lionville Laboratory

PCBs by GC

Report Date: 09/28/99 15:57

RFW Batch Number: **9908L906** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1

004

	Cust ID:	B0W6B0	B0W699	B0W699	B0W699	B0W697	B0W694
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	88 %	95 %	100 %	105 %	98 %	100 %
	Decachlorobiphenyl	86 %	89 %	92 %	98 %	90 %	94 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		34 U	35 U	35 U	35 U	36 U	49 U
Aroclor-1221		69 U	70 U	70 U	70 U	73 U	98 U
Aroclor-1232		34 U	35 U	35 U	35 U	36 U	49 U
Aroclor-1242		34 U	35 U	35 U	35 U	36 U	49 U
Aroclor-1248		34 U	35 U	35 U	35 U	36 U	49 U
Aroclor-1254		34 U	35 U	79 %	73 %	36 U	49 U
Aroclor-1260		34 U	35 U	35 U	35 U	36 U	49 U

	Cust ID:	B0W692	B0W6B1	B0W693	B0W698	PBLKUH	PBLKUH BS
Sample Information	RFW#:	005	006	007	008	99LE1087-MB1	99LE1087-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	78 %	102 %	72 %	98 %	100 %	90 %
	Decachlorobiphenyl	71 %	97 %	72 %	93 %	92 %	82 %
		fl	fl	fl	fl	fl	fl
Aroclor-1016		37 U	35 U	37 U	35 U	33 U	33 U
Aroclor-1221		74 U	70 U	74 U	69 U	67 U	67 U
Aroclor-1232		37 U	35 U	37 U	35 U	33 U	33 U
Aroclor-1242		37 U	35 U	37 U	35 U	33 U	33 U
Aroclor-1248		37 U	35 U	37 U	35 U	33 U	33 U
Aroclor-1254		37 U	35 U	37 U	35 U	33 U	65 %
Aroclor-1260		37 U	35 U	37 U	35 U	33 U	33 U

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

Recra LabNet - Lionville Laboratory
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0	001	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W699	002	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W699	002 MS	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W699	002 MSD	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W697	003	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W694	004	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W692	005	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W6B1	006	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W693	007	S	99LE1087	08/25/99	09/07/99	09/24/99
B0W698	008	S	99LE1087	08/25/99	09/07/99	09/24/99

LAB QC:

PBLKUH	MB1	S	99LE1087	N/A	09/07/99	09/23/99
PBLKUH	MB1 BS	S	99LE1087	N/A	09/07/99	09/23/99

RECRA LabNet Use Only
9908L906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) ~~perrone wet lab~~ All

Client: TNU-Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: CJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6	1					6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1					500		250	4oz				
Preservatives																
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN							

RECRA LabNet Use Only

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	8260 24H	8270 25H	8081 PCB	8151 Herb	8010		Metal		1 PH	Anions
	0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X		X		X	X
	2	99					1051										
	3	97					1004										
	4	94					0926										
	5	~~B1~~ 92 (8/26/99)					0845										
	6	~~93~~ B1 (8/26/99)					1118										
	7	~~98~~ 93					0909										
	8	98					1032										

BATCH WASTE

Run matrix QC

Special Instructions:

SAF # B99-078

9/21/99 Waste Code changed to Batch waste

~~8/30/99 IN3N2 cancelled~~

8/9/2/99

~~COMPOSITE WASTE~~

BATCH WASTE

DATE/REVISIONS:

1. Met = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICRG
3. Anions = ~~IN3N2~~ IN3N2, ICCL, ICFL, ICNO2, ICNO3,
4. ICPO4, ICSO4, ISFD, INH3N, ICNTO (8/30/99)
5. OGCSC = ethanol + propanol

*4253795287 50-4.2°C, *4235795287 49-5.1°C *4476545931-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

RECRA LabNet Use Only

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

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

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

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N — Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 >15' bgs 22'-23'		SAF No. B99-078	
Ice Chest No. GWS 130	Field Logbook No. EL-1511		Method of Shipment Federal Express	
Shipped To ~~TMA~~/RECRA 8.25.99	Offsite Property No. A990230		Bill of Lading/Air Bill No. 4235 7952 8749	
			COA B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W6B0	Soil	8/25/99	11:03						X	X	X	X	X
												Bowers/N1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By RF6 JB	Date/Time 8/26/99 11:00	Received By CTRICE/Chris	Date/Time 8/26/99 11:00
Relinquished By CTRICE/Chris	Date/Time 8/26/99 14:00	Received By FEDEX	Date/Time
Relinquished By FedEx	Date/Time 8.27.99/0930	Received By D Smith	Date/Time 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 20' - 21'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Special Handling and/or Storage

Sample No.	Matrix *	Sample Date	Sample Time										
02 B0W699	Soil	8/25/99	10:51						X	X	X	X	X
												Bowers	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15'-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W697	Soil	8/25/99	10:04						X	X	X	X	X
												Dup 5/1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/Cfice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Cfice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8/27/99/0930	Received By: D. Jones	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'	SAF No.: B99-078	
Ice Chest No.: ETC6-96059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1 67IC	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {I-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B0W694	Soil	8/25/99	09:26			X	X	X	X	X	B0CW1 67IC

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter IB	Date/Time: 8/25/99/1410
Relinquished By: Peter IB	Date/Time: 8.26.99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8.26.99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 10' - 11'	SAF No.: B99-078	
Ice Chest No.: ERC 96 059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA B10 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1-671C	

011

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
005 B0W692	Soil	8/25/99	08:45			X	X	X	X	X		B0W5L9	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter J-B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg/R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg/R. Fahlberg	Date/Time: 1400 8-26-99	Received By: FED Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Amaro	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~AA~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
306 B0W6B1	Soil	8/25/99	11:18						X	X	X	X	X
											Bowers		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: [signature]	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 12.5' - 13.5'		SAF No. B99-078		
Ice Chest No. ERC-96-051	Field Logbook No. EL-1511		Method of Shipment Federal Express		
Shipped To ~~CMA~~/RECRA ~~810~~ 8-25-99	Offsite Property No. A990230		Bill of Lading/Air Bill No. 4235 7952 8750		
			COA B20CW1 671C		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
007 B0W693	Soil	8/25/99	09:09			X	X	X	X	X		B0W3M0	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By Brent Porter	Date/Time 8/25/99/1410	Received By Peter JB	Date/Time 8/25/99/1410
Relinquished By Peter JB	Date/Time 8.26.99 0800	Received By R. Felling / R. Felling	Date/Time 0800 8.26.99
Relinquished By R. Felling / R. Felling	Date/Time 1400 8.26.99	Received By Fed Ex	Date/Time
Relinquished By Fed Ex	Date/Time 8.27.99/0930	Received By D. Jones	Date/Time 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96.051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 + B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
008 B0W698	Soil	8/25/99	10:32						X	X	X	X	X
												Dowsm	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter J.B	Date/Time: 8-26-99 0800	Received By: R.Fahlberg / R.Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R.Fahlberg / R.Fahlberg	Date/Time: 400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99 / 0930	Received By: D. Ignatius	Date/Time: 8-27-99 / 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9908L906
SDG/SAF #: H0506/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 08-27-99

SEMIVOLATILE

Eight (8) soil samples were collected on 08-25-99.

The samples and their associated QC samples were extracted on 09-07-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270B for TCL Semivolatile target compounds on 09-23-99.

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 temperatures upon receipt have been recorded on the chain-of-custody.

2. The required holding times for extraction and analysis were met.

3. Non-target compounds were detected in the samples.

4. Sample B0W694 required 2-fold dilution due to high levels of both target and non-target compounds.

5. All surrogate recoveries were within EPA QC limits.

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

7. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.

OCT 1999
RECEIVED
Data
Log In

by St O Wesson
J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

10-12-99
Date

som\gorup\data\bna\tnu08906.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 26 pages.

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

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.

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Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 09/30/99 15:18

RFW Batch Number: 9908L906 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1a

	Cust ID:	B0W6B0		B0W6B0		B0W6B0		B0W699		B0W697		B0W694	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		2.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	90	%	75	%	95	%	99	%	86	%	77	%
	2-Fluorobiphenyl	89	%	74	%	89	%	96	%	84	%	79	%
	Terphenyl-d14	100	%	82	%	101	%	105	%	95	%	83	%
	Phenol-d5	81	%	68	%	85	%	86	%	79	%	68	%
	2-Fluorophenol	77	%	65	%	81	%	82	%	74	%	67	%
	2,4,6-Tribromophenol	83	%	67	%	78	%	78	%	75	%	66	%
			fl		fl		fl		fl		fl		fl
Phenol		18	J	65	%	76	%	20	J	20	J	980	U
bis(2-Chloroethyl)ether		340	U	340	U	340	U	350	U	360	U	980	U
2-Chlorophenol		340	U	64	%	76	%	350	U	360	U	980	U
1,3-Dichlorobenzene		340	U	340	U	340	U	350	U	360	U	980	U
1,4-Dichlorobenzene		340	U	69	%	83	%	350	U	360	U	980	U
1,2-Dichlorobenzene		340	U	340	U	340	U	350	U	360	U	980	U
2-Methylphenol		340	U	340	U	340	U	350	U	360	U	980	U
2,2'-oxybis(1-Chloropropane)		340	U	340	U	340	U	350	U	360	U	980	U
4-Methylphenol		340	U	340	U	340	U	350	U	360	U	980	U
N-Nitroso-di-n-propylamine		340	U	87	%	100	%	350	U	360	U	980	U
Hexachloroethane		340	U	340	U	340	U	350	U	360	U	980	U
Nitrobenzene		340	U	340	U	340	U	350	U	360	U	980	U
Isophorone		340	U	340	U	340	U	350	U	360	U	980	U
2-Nitrophenol		340	U	340	U	340	U	350	U	360	U	980	U
2,4-Dimethylphenol		340	U	340	U	340	U	350	U	360	U	980	U
bis(2-Chloroethoxy)methane		340	U	340	U	340	U	350	U	360	U	980	U
2,4-Dichlorophenol		340	U	340	U	340	U	350	U	360	U	980	U
1,2,4-Trichlorobenzene		340	U	72	%	87	%	350	U	360	U	980	U
Naphthalene		340	U	340	U	340	U	350	U	360	U	980	U
4-Chloroaniline		340	U	340	U	340	U	350	U	360	U	980	U
Hexachlorobutadiene		340	U	340	U	340	U	350	U	360	U	980	U
4-Chloro-3-methylphenol		340	U	64	%	76	%	350	U	360	U	980	U
2-Methylnaphthalene		340	U	340	U	340	U	350	U	360	U	980	U
Hexachlorocyclopentadiene		340	U	340	U	340	U	350	U	360	U	980	U
2,4,6-Trichlorophenol		340	U	340	U	340	U	350	U	360	U	980	U
2,4,5-Trichlorophenol		860	U	860	U	860	U	870	U	900	U	2400	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9908L906 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1b

Cust ID:	B0W6B0		B0W6B0		B0W6B0		B0W699		B0W697		B0W694	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	340	U	340	U	340	U	350	U	360	U	980	U
2-Nitroaniline	860	U	860	U	860	U	870	U	900	U	2400	U
Dimethylphthalate	340	U	340	U	340	U	350	U	360	U	980	U
Acenaphthylene	340	U	340	U	340	U	350	U	360	U	980	U
2,6-Dinitrotoluene	340	U	340	U	340	U	350	U	360	U	980	U
3-Nitroaniline	860	U	860	U	860	U	870	U	900	U	2400	U
Acenaphthene	340	U	75	%	89	%	350	U	360	U	980	U
2,4-Dinitrophenol	860	U	860	U	860	U	870	U	900	U	2400	U
4-Nitrophenol	860	U	59	%	70	%	870	U	900	U	2400	U
Dibenzofuran	340	U	340	U	340	U	350	U	360	U	980	U
2,4-Dinitrotoluene	340	U	75	%	89	%	350	U	360	U	980	U
Diethylphthalate	340	U	340	U	340	U	350	U	360	U	980	U
4-Chlorophenyl-phenylether	340	U	340	U	340	U	350	U	360	U	980	U
Fluorene	340	U	340	U	340	U	350	U	360	U	980	U
4-Nitroaniline	860	U	860	U	860	U	870	U	900	U	2400	U
4,6-Dinitro-2-methylphenol	860	U	860	U	860	U	870	U	900	U	2400	U
N-Nitrosodiphenylamine (1)	340	U	340	U	340	U	350	U	360	U	980	U
4-Bromophenyl-phenylether	340	U	340	U	340	U	350	U	360	U	980	U
Hexachlorobenzene	340	U	340	U	340	U	350	U	360	U	980	U
Pentachlorophenol	860	U	64	%	79	%	870	U	900	U	2400	U
Phenanthrene	340	U	340	U	340	U	350	U	360	U	980	U
Anthracene	340	U	340	U	340	U	350	U	360	U	980	U
Carbazole	340	U	340	U	340	U	350	U	360	U	980	U
Di-n-butylphthalate	340	U	340	U	340	U	350	U	360	U	980	U
Fluoranthene	340	U	340	U	340	U	350	U	360	U	980	U
Pyrene	340	U	79	%	91	%	350	U	360	U	980	U
Butylbenzylphthalate	340	U	340	U	340	U	350	U	360	U	980	U
3,3'-Dichlorobenzidine	340	U	340	U	340	U	350	U	360	U	980	U
Benzo(a)anthracene	340	U	340	U	340	U	350	U	360	U	980	U
Chrysene	340	U	340	U	340	U	350	U	360	U	980	U
bis(2-Ethylhexyl)phthalate	340	U	340	U	340	U	350	U	360	U	980	U
Di-n-octyl phthalate	340	U	340	U	340	U	350	U	360	U	980	U
Benzo(b)fluoranthene	340	U	340	U	340	U	350	U	360	U	980	U
Benzo(k)fluoranthene	340	U	340	U	340	U	350	U	360	U	980	U
Benzo(a)pyrene	340	U	340	U	340	U	350	U	360	U	980	U
Indeno(1,2,3-cd)pyrene	340	U	340	U	340	U	350	U	360	U	980	U
Dibenz(a,h)anthracene	340	U	340	U	340	U	350	U	360	U	980	U
Benzo(g,h,i)perylene	340	U	340	U	340	U	350	U	360	U	980	U

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

	Cust ID:	B0W692	B0W6B1	B0W693	B0W698	SBLKCP	SBLKCP BS
Sample Information	RFW#:	005	006	007	008	99LE1086-MB1	99LE1086-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	Nitrobenzene-d5	88 %	91 %	89 %	88 %	99 %	95 %
	2-Fluorobiphenyl	86 %	88 %	86 %	80 %	100 %	91 %
	Terphenyl-d14	90 %	95 %	92 %	84 %	103 %	103 %
	Phenol-d5	79 %	82 %	80 %	74 %	84 %	86 %
	2-Fluorophenol	75 %	79 %	76 %	73 %	79 %	81 %
	2,4,6-Tribromophenol	80 %	72 %	68 %	73 %	77 %	83 %
		fl	fl	fl	fl	fl	fl
Phenol		25 J	350 U	23 J	350 U	330 U	78 %
bis(2-Chloroethyl)ether		370 U	350 U	370 U	350 U	330 U	330 U
2-Chlorophenol		370 U	350 U	370 U	350 U	330 U	79 %
1,3-Dichlorobenzene		370 U	350 U	370 U	350 U	330 U	330 U
1,4-Dichlorobenzene		370 U	350 U	370 U	350 U	330 U	85 %
1,2-Dichlorobenzene		370 U	350 U	370 U	350 U	330 U	330 U
2-Methylphenol		370 U	350 U	370 U	350 U	330 U	330 U
2,2'-oxybis(1-Chloropropane)		370 U	350 U	370 U	350 U	330 U	330 U
4-Methylphenol		370 U	350 U	370 U	350 U	330 U	330 U
N-Nitroso-di-n-propylamine		370 U	350 U	370 U	350 U	330 U	102 %
Hexachloroethane		370 U	350 U	370 U	350 U	330 U	330 U
Nitrobenzene		370 U	350 U	370 U	350 U	330 U	330 U
Isophorone		370 U	350 U	370 U	350 U	330 U	330 U
2-Nitrophenol		370 U	350 U	370 U	350 U	330 U	330 U
2,4-Dimethylphenol		370 U	350 U	370 U	350 U	330 U	330 U
bis(2-Chloroethoxy)methane		370 U	350 U	370 U	350 U	330 U	330 U
2,4-Dichlorophenol		370 U	350 U	370 U	350 U	330 U	330 U
1,2,4-Trichlorobenzene		370 U	350 U	370 U	350 U	330 U	89 %
Naphthalene		370 U	350 U	370 U	350 U	330 U	330 U
4-Chloroaniline		370 U	350 U	370 U	350 U	330 U	330 U
Hexachlorobutadiene		370 U	350 U	370 U	350 U	330 U	330 U
4-Chloro-3-methylphenol		370 U	350 U	370 U	350 U	330 U	80 %
2-Methylnaphthalene		370 U	350 U	370 U	350 U	330 U	330 U
Hexachlorocyclopentadiene		370 U	350 U	370 U	350 U	330 U	330 U
2,4,6-Trichlorophenol		370 U	350 U	370 U	350 U	330 U	330 U
2,4,5-Trichlorophenol		920 U	870 U	920 U	860 U	840 U	840 U

*= Outside of EPA CLP QC limits.

Cust ID:	B0W692		B0W6B1		B0W693		B0W698		SBLKCP		SBLKCP BS	
RFW#:	005		006		007		008		99LE1086-MB1		99LE1086-MB1	
2-Chloronaphthalene	370	U	350	U	370	U	350	U	330	U	330	U
2-Nitroaniline	920	U	870	U	920	U	860	U	840	U	840	U
Dimethylphthalate	370	U	350	U	370	U	350	U	330	U	330	U
Acenaphthylene	370	U	350	U	370	U	350	U	330	U	330	U
2,6-Dinitrotoluene	370	U	350	U	370	U	350	U	330	U	330	U
3-Nitroaniline	920	U	870	U	920	U	860	U	840	U	840	U
Acenaphthene	370	U	350	U	370	U	350	U	330	U	91	%
2,4-Dinitrophenol	920	U	870	U	920	U	860	U	840	U	840	U
4-Nitrophenol	920	U	870	U	920	U	860	U	840	U	70	%
Dibenzofuran	370	U	350	U	370	U	350	U	330	U	330	U
2,4-Dinitrotoluene	370	U	350	U	370	U	350	U	330	U	91 *	%
Diethylphthalate	370	U	350	U	370	U	350	U	330	U	330	U
4-Chlorophenyl-phenylether	370	U	350	U	370	U	350	U	330	U	330	U
Fluorene	370	U	350	U	370	U	350	U	330	U	330	U
4-Nitroaniline	920	U	870	U	920	U	860	U	840	U	840	U
4,6-Dinitro-2-methylphenol	920	U	870	U	920	U	860	U	840	U	840	U
N-Nitrosodiphenylamine (1)	370	U	350	U	370	U	350	U	330	U	330	U
4-Bromophenyl-phenylether	370	U	350	U	370	U	350	U	330	U	330	U
Hexachlorobenzene	370	U	350	U	370	U	350	U	330	U	330	U
Pentachlorophenol	920	U	870	U	920	U	860	U	840	U	79	%
Phenanthrene	370	U	350	U	370	U	350	U	330	U	330	U
Anthracene	370	U	350	U	370	U	350	U	330	U	330	U
Carbazole	370	U	350	U	370	U	350	U	330	U	330	U
Di-n-butylphthalate	23	J	350	U	370	U	350	U	330	U	330	U
Fluoranthene	370	U	350	U	370	U	350	U	330	U	330	U
Pyrene	370	U	350	U	370	U	350	U	330	U	94	%
Butylbenzylphthalate	370	U	350	U	370	U	350	U	330	U	330	U
3,3'-Dichlorobenzidine	370	U	350	U	370	U	350	U	330	U	330	U
Benzo(a)anthracene	370	U	350	U	370	U	350	U	330	U	330	U
Chrysene	370	U	350	U	370	U	350	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	370	U	350	U	370	U	350	U	330	U	330	U
Di-n-octyl phthalate	370	U	350	U	370	U	350	U	330	U	330	U
Benzo(b)fluoranthene	370	U	350	U	370	U	350	U	330	U	330	U
Benzo(k)fluoranthene	370	U	350	U	370	U	350	U	330	U	330	U
Benzo(a)pyrene	370	U	350	U	370	U	350	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	370	U	350	U	370	U	350	U	330	U	330	U
Dibenz(a,h)anthracene	370	U	350	U	370	U	350	U	330	U	330	U
Benzo(g,h,i)perylene	370	U	350	U	370	U	350	U	330	U	330	U

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W6B0

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092307

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 3 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.71	200	JAB
2.	ALDOL CONDENSATE	9.25	100	JAB
3.	DIETHYLBIPHENYL	20.34	80	J
4.	UNKNOWN	21.77	300	JB
5.	UNKNOWN	25.33	700	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W699

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092310

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.71	300	JAB
2.	ALDOL CONDENSATE	9.24	200	JAB
3.	ALDOL CONDENSATE	10.02	100	JA
4.	DIETHYLBIPHENYL	20.34	90	J
5.	UNKNOWN	21.34	700	JB
6.	UNKNOWN	21.77	300	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W697

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092311

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 8 decanted: (Y/N) Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.70	300	JAB
2.	ALDOL CONDENSATE	9.23	200	JAB
3.	ALDOL CONDENSATE	10.02	100	JA
4.	DIETHYLBIPHENYL	20.33	80	J
5.	UNKNOWN	21.77	300	JB
6.	UNKNOWN	25.33	800	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W694

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092312

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 32 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 2.00

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

Number TICs found: 7

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.71	300	JAB
2.	ALDOL CONDENSATE	9.24	600	JAB
3.	ALDOL CONDENSATE	10.02	300	JA
4.	UNKNOWN	21.76	400	JB
5.	UNKNOWN	25.34	800	JB
6.	ALKANE	30.17	200	J
7.	UNKNOWN	36.64	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W692

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092313

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 10 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.70	300	JAB
2.	ALDOL CONDENSATE	9.24	400	JAB
3.	ALDOL CONDENSATE	10.02	200	JA
4.	DIETHYLBIPHENYL	20.33	70	J
5.	UNKNOWN	21.76	400	JB
6.	UNKNOWN	23.23	400	J
7.	UNKNOWN	25.33	800	JB
8.	ALKANE	30.16	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W6B1

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092314

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 4 decanted: (Y/N) Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH:

Number TICs found: 7

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.70	300	JAB
2.	UNKNOWN	8.95	90	J
3.	ALDOL CONDENSATE	9.24	200	JAB
4.	ALDOL CONDENSATE	10.02	100	JA
5.	DIETHYLBIPHENYL	20.33	70	J
6.	UNKNOWN	21.77	300	JB
7.	UNKNOWN	25.33	700	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W693

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092315

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 10 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.69	300	JAB
2.	ALDOL CONDENSATE	9.24	400	JAB
3.	ALDOL CONDENSATE	10.01	200	JA
4.	DIETHYLBIPHENYL	20.33	70	J
5.	UNKNOWN	21.76	300	JB
6.	UNKNOWN	25.33	600	JB
7.	ALKANE	30.16	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W698

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9908L906-008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A092315

Level: (low/med) LOW Date Received: 08/27/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	7.78	200	JAB
2.	ALDOL CONDENSATE	8.35	90	JAB
3.	ALDOL CONDENSATE	9.13	90	JA
4.	DIETHYLBIPHENYL	19.57	90	J
5.	UNKNOWN	21.12	200	JB
6.	UNKNOWN	24.32	700	JB

1F

SEMIVOLATILE ORGANICS, ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKCP

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 99LE1086-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092305

Level: (low/med) LOW Date Received: 09/07/99

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 09/07/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/23/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.71	200	JA
2.	ALDOL CONDENSATE	9.24	100	JA
3.	ORGANIC ACID	21.77	300	J
4.	UNKNOWN	25.33	500	J

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0	001	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W6B0	001 MS	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W6B0	001 MSD	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W699	002	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W697	003	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W694	004	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W692	005	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W6B1	006	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W693	007	S	99LE1086	08/25/99	09/07/99	09/23/99
B0W698	008	S	99LE1086	08/25/99	09/07/99	09/23/99

LAB QC:

SBLKCP	MB1	S	99LE1086	N/A	09/07/99	09/23/99
SBLKCP	MB1 BS	S	99LE1086	N/A	09/07/99	09/23/99

RECRA LabNet Use Only
99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) ~~perform wet lab~~ All

Client: INU-Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: CJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6						6		6	6			
#/Type Container	Liquid														
	Solid	1g	1g						1g		1g	1g			
Volume	Liquid														
	Solid	250	500						500		250	4oz			
Preservatives															
ANALYSES REQUESTED →		ORGANIC							INORG						
		VOA	BNA	Pest/PCB	Herb				Metal	CN					
RECRA LabNet Use Only		8260 24H	8270 25H	8081 PCB	~~8081 PCB~~ 8151 OGCSC		8015 DRO		metal		1 PH	Anions			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb			Metal	CN				
0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X	X		X	X		
2	99					1051												
3	97					1004												
4	94					0926												
5	~~B1~~ 92					0845												
6	~~93~~ B1					1118												
7	~~98~~ 93					0909												
8	98					1032												
						Run	matrix	QC										

BATCH WASTE

Special Instructions:

Saf # B99-078

9/21/99 Waste Code changed to Batch waste

~~8/30/99 IN3N2 cancelled~~

8/9/21/99

~~COMPOSITE WASTE~~

BATCH WASTE

DATE/REVISIONS:

1. met = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICR6
3. Anions = ~~IN3N2~~ IN3N2, ICCL, ICFL, ICNO2, ICNO3,
4. ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGCSC = ethanol + propanol

8/30/99

*4253795287 50-4.2°C, *42357952 ~~8749~~ 5.1°C *4476545931-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

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

RECRA LabNet Use Only

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

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

7900L100

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock; Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N; Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
301 B0W6B0	Soil	8/25/99	11:03						X	X	X	X	X
												BOW5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG/JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil; Water; Vapor; Other Solid; Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 20' - 21'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
302 B0W699	Soil	8/25/99	10:51						X	X	X	X	X
												Bowers	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TM4A/RECRA~~	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
003 B0W697	Soil / 8/25/99 / 10:04						X	X	X	X	X
										Dup 541	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/Ctrice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Ctrice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: ~~D. Fed Ex~~ 8-27-99	Date/Time: 8/27/99/0930	Received By: D. Smith	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'		SAF No.: B99-078
Ice Chest No.: ETC-96059	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 0700 8.25.99	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS											
Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage — Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {I-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No. / Matrix * / Sample Date / Sample Time										
004 B0W694 / Soil / 8/25/99 / 09:26			X	X	X	X	X	X	BOWFN2	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: Brent Porter, Date/Time: 8/25/99/1410	Received By: Peter JB, Date/Time: 8/25/99/1410	
Relinquished By: Peter JB, Date/Time: 8.26.99 0800	Received By: R. Fahlberg, Date/Time: 0800 8.26.99	
Relinquished By: R. Fahlberg, Date/Time: 1400 8.26.99	Received By: Fed Ex, Date/Time:	
Relinquished By: Fed Ex, Date/Time: 8.27.99/0930	Received By: D. Smith, Date/Time: 8.27.99/0930	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 10'-11'		SAF No.: B99-078
Ice Chest No.: RC 96 059	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 810 8-25-99	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A
			COA: B20CW1-671C

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
205 B0W692	Soil	8/25/99	08:45			X	X	X	X	X		DOW569	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: FED Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Amaro	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 -- Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-057	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~AT~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
306 B0W6B1	Soil	8/25/99	11:18						X	X	X	X	X
											Bow 5M		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not availiblete sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 12.5' - 13.5'		SAF No.: B99-078
Ice Chest No.: ERC-96-051	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8750
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix * / Sample Date / Sample Time										
207 B0W693	Soil / 8/25/99 / 09:09			X	X	X	X	X		B0W3M0	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter JB	Date/Time: 8.26.99 0800	Received By: R. Felling / R. Fellows	Date/Time: 0800 8.26.99
Relinquished By: R. Felling / R. Fellows	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: [signature]	Date/Time: 8.27.99/0930
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock; Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N; Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20GW + B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
008 B0W698	Soil	8/25/99	10:32						X	X	X	X	X
												Dow5M1	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Brent Porter	8/25/99 1410	Peter JB	8/25/99 1410
Peter J.B	8-26-99 0800	R. Fahlberg / R. Fahlberg	8-26-99 0800
R. Fahlberg / R. Fahlberg	8-26-99 1400	Fed Ex	
Fed Ex	8-27-99 0930	D. Johnson	8-27-99 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client: TNU HANFORD B99-078
RFW #: 9908L906
SDG/SAF#: H0506/B99-078

W.O. #: #: 10985-001-001-9999-00
Date Received: 08-27-99

GC SCAN

The set of samples consisted of eight (8) soil samples collected on 08-25-99.

The samples and their associated QC samples were prepared on 08-31-99 and 09-02-99 and analyzed by methodology based on EPA Method 8015B for Ethanol and Butanol on 09-02,03-99.

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 samples were packaged and stored as specified in the method protocol; the cooler temperature upon receipt has been recorded on the chain-of-custody.

2. The required holding time for analysis was met.

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

4. Continuing calibration criteria (±15%) were exceeded for the continuing calibration verification standard analyzed prior to the sample extracts. Outlying standard(s) generally exhibited increased instrument response. However sample data were not impacted as target analytes were not detected in the associated samples analyzed immediately after such standard(s). A copy of the Sample Discrepancy Report (SDR) has been enclosed in the data package.

5. Surrogates were not used for this analysis.

6. The blank spike recovery was within advisory control limits of 50%-150%.

7. All matrix spike recoveries were within advisory control limits of 50%-150%.

OCT 1999
RECEIVED
Data
Log In

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

9-20-99
Date

r:\share\lc\gcscan\08-906.doc

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

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

GLOSSARY OF OGCSC DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

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

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates spiked compound.

Recra LabNet Philadelphia Sample Discrepancy Report (SDR) SDR #: 14032

Initiator: C Schnell
Date: 9/16/99
Client: TNU-Hanford

RFW Batch: 9908L821, 9908L850, 9908L926, 9908L851, 9908L931, 9908L963
Samples: 99091006
Method: SW846/MCAWW/CLP/

Parameter: OGCSC
Matrix:
Prep Batch: Multiple

1. Reason for SDR

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

b. General Discrepancy

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

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

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

CCV response somewhat erratic during sample analysis, most being high. In cases whereby instrument response decreased, the decrease did not exceed -20% Deviation.

2. Known or Probable Causes(s)

- Heavy analysis load combined with aqueous matrix contributes to reduced stability of instrument response compared to solvent type matrices.

3. Discussion and Proposed Action

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

Other Description:

- No positives found in any samples.
- The laboratory limit of ±15% Deviation is derived from common analyses and may not be applicable to extended runs of aqueous samples, where such criteria may not be readily achievable.

4. Project Manager Instructions...signature/date: Michelle G. Johnson 9/16/99

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

5. Final Action...signature/date: [illegible] 9/16/99

Other Explanation:

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

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
2	X Initiator	__	__ Metals: Doughty
__	X Lab Manager: M. Taylor	__	__ Inorganic: Perrone
1	X Project Mgr: Stone/Carey/Schrenkel/Johnson	__	__ GC/LC: Schnell
__	X Section Mgr: Wesson/Daniels	__	__ MS: LeMin/Taylor
4	X QA (file): Racioppi	__	__ Log-in: Toder
3	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Schnell/Doughty/Kauffman	__	__ Other: _____

L-WI-006/E-03/99

Recra LabNet - Lionville Laboratory

GC SCAN

Report Date: 09/13/99 15:26

RFW Batch Number: **9908L906** Client: **TNU-HANFORD B99-078** Work Order: **10985-001-001-9999-00** Page: 1

004

	Cust ID:	B0W6B0	B0W6B0	B0W6B0	B0W699	B0W697	B0W694
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
n-Propyl Alcohol		2.7 U	102 %	104 %	4.2 U	5.5 U	6.0 U
Ethanol		2.7 U	3.0 U	4.2 U	4.2 U	5.5 U	6.0 U

	Cust ID:	B0W692	B0W6B1	B0W693	B0W698	BLK	BLK BS
Sample Information	RFW#:	005	006	007	008	99LLC129-MB1	99LLC129-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
n-Propyl Alcohol		5.5 U	3.9 U	5.5 U	4.8 U	5.0 U	95 %
Ethanol		5.5 U	3.9 U	5.5 U	4.8 U	5.0 U	5.0 U

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

09/10/99

Recra LabNet - Lionville Laboratory
GCSC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0	001	S	99LLC129	08/25/99	08/31/99	09/03/99
B0W6B0	001 MS	S	99LLC129	08/25/99	08/31/99	09/03/99
B0W6B0	001 MSD	S	99LLC129	08/25/99	08/31/99	09/03/99
B0W699	002	S	99LLC129	08/25/99	08/31/99	09/03/99
B0W697	003	S	99LLC129	08/25/99	08/31/99	09/02/99
B0W694	004	S	99LLC129	08/25/99	08/31/99	09/02/99
B0W692	005	S	99LLC129	08/25/99	08/31/99	09/02/99
B0W6B1	006	S	99LLC129	08/25/99	08/31/99	09/02/99
B0W693	007	S	99LLC129	08/25/99	08/31/99	09/02/99
B0W698	008	S	99LLC129	08/25/99	08/31/99	09/02/99

LAB QC:

BLK	MB1	S	99LLC129	N/A	08/31/99	09/03/99
BLK	MB1 BS	S	99LLC129	N/A	08/31/99	09/03/99

9/13/99

RECRA LabNet Use Only: 99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) perrone wet lab

Client: TNU - Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6						6		6	6			
#/Type Container	Liquid														
	Solid	1g	1g						1g		1g	1g			
Volume	Liquid														
	Solid	250	500						500		250	4tr			
Preservatives															
ANALYSES REQUESTED	ORGANIC: VOA								INORG: Metal						
	ORGANIC: BNA														
	ORGANIC: Pest/PCB														
	ORGANIC: Herb														
	INORG: CN														

RECRA LabNet Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	OPCB	~~8/27/99~~ OGCSC	ODRO		metal		1 PH	Inorg				
0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X		X		X	X			
2	99					1051														
3	97					1004														
4	94					0926														
5	~~B1~~ 92					0845														
6	~~93~~ B1					1118														
7	~~98~~ 93					0909														
8	98					1032														
						Run matrix QC														

Special Instructions:

saf # B99-078

~~8/30/99 1N3N2 canceled - Grist Remove~~

8/31/99

COMPOSITE WASTE

DATE/REVISIONS:

1. Met = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICR6
3. Ans = ~~1N3N2~~ 1N3N2, ICCL, ICFL, ICNO2, ICNO3,
4. 8/30/99 ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGCSC = ethanol + propanol

*4253795287 50-4.2°C, *4235795287 49-5.1°C *4476545931-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

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

RECRA LabNet Use Only

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

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

9408L700

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA/RECRA~~ 8.25.99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

	Sample No.	Matrix *	Sample Date	Sample Time										
301	B0W6B0	Soil	8/25/99	11:03						X	X	X	X	X
													BOWSM1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RF6JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supernate) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 23'-21'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix * / Sample Date / Sample Time										
302 B0W699	Soil / 8/25/99 / 10:51						X	X	X	X	X
										Bowers	MJ

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFB JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Spaid	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA/RECRA~~	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
303 B0W697	Soil 8/25/99 10:04						X	X	X	X	X
										Dup 5/1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1610
Relinquished By: RFG 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/CTrice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/CTrice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: D. Fed Ex	Date/Time: 8/27/99/0930	Received By: D Smith	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS
See chain of custody comments on SAF B99-078.
COLLECTOR UNAVAILABLE TO SIGN COC
(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'		SAF No.: B99-078
Ice Chest No.: ETC-96059	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 070 8-25-99	Offsite Property No.: N/A		Bill of Lading/Air Bill No.: N/A
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
Special Handling and/or Storage	No. of Container(s)	1	1	1	1	1	1	1	1		
	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
004 B0W694	Soil	8/25/99	09:26			X	X	X	X	X	BOWERS

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Bof 1-B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R Fahlberg / R Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 10' - 11'	SAF No.: B99-078	
Ice Chest No.: FRC 96 059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 810 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1-671C	

0111

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions		
Sample No.	Matrix *	Sample Date	Sample Time								
305 B0W692	Soil	8/25/99	08:45			X	X	X	X	X	B0W569

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: Brent Porter Date/Time: 8/25/99/1410	Received By: Refer 1B Date/Time: 8/25/99/1410	
Relinquished By: Ref 1-B Date/Time: 8.26.99 0800	Received By: R. Fahlberg/R. Fahlberg Date/Time: 8.26.99 0800	
Relinquished By: R. Fahlberg/R. Fahlberg Date/Time: 8.26.99 1400	Received By: FED Ex Date/Time:	
Relinquished By: Fed Ex Date/Time: 8.27.99/0930	Received By: D. Amen Date/Time: 8.27.99/0930	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~AF~~ A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time								
006 B0W6B1	Soil	8/25/99	11:18				X	X	X	X	X
									Bowers		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer TB	Date/Time: 8/25/99/1410
Relinquished By: Ref 1 TB	Date/Time: 8-26-99 0800	Received By: R. Falkenberg / R. Falkenberg	Date/Time: 0800 8-26-99
Relinquished By: R. Falkenberg / R. Falkenberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not availible to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 12.5' - 13.5'	SAF No.: B99-078	
Ice Chest No.: ERC-96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 8-25-99	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
007 B0W693	Soil	8/25/99	09:09			X	X	X	X	X	B0W3M0

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Peter JB	Date/Time: 8.26.99 0800	Received By: R.F. Kelly / R.F. Kelly	Date/Time: 0800 8.26.99
Relinquished By: R.F. Kelly / R.F. Kelly	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: [signature]	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 21

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96.051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8750	
		COA: B20GW + B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
008 B0W698	Soil / 8/25/99 / 10:32						X	X	X	X	X
										Dow5M1	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99 1410	Received By: Refer JB	Date/Time: 8/25/99 1410
Relinquished By: Ref J.B	Date/Time: 8-26-99 0800	Received By: R.Fahlberg / R.Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R.Fahlberg / R.Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99 / 0930	Received By: D. Ajmutt	Date/Time: 8-27-99 / 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9908L906
SDG/SAF #: H0506/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 08-27-99

GC/MS VOLATILE

Eight (8) soil samples were collected on 08-25-99.

The samples and their associated QC samples were analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8260A for TCL Volatile target compounds on 09-08-99.

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 temperatures upon receipt have been recorded on the chain-of-custody.

2. The required holding time for analysis was met.

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

4. Seven (7) of thirty-six (36) surrogate recoveries were outside EPA QC limits. The analyses of associated matrix spike samples fulfills the reanalysis requirements for sample B0W692 Sample B0W692 was reanalyzed on 09-08-99 and reported.

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

6. The method blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than 2x the CRQL.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

10-12-99
Date

OCT 1999
RECEIVED
Data
Log In

som\group\data\ voa\tnu08906.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 17 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

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 10/04/99 01:37

RFW Batch Number: 9908L906 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1a

	Cust ID:	B0W6B0	B0W699	B0W697	B0W694	B0W694	B0W692
Sample Information	RFW#:	001	002	003	004	004	005
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.980	0.943	0.926	1.04	0.962	0.943
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG REPREP	UG/KG
Surrogate Recovery	Toluene-d8	111 %	116 %	114 %	132 * %	122 * %	121 * %
	Bromofluorobenzene	88 %	88 %	82 %	65 * %	80 %	70 * %
	1,2-Dichloroethane-d4	103 %	112 %	113 %	134 * %	138 * %	93 %
Chloromethane		10 U	10 U	10 U	15 U	14 U	10 U
Bromomethane		10 U	10 U	10 U	15 U	14 U	10 U
Vinyl Chloride		10 U	10 U	10 U	15 U	14 U	10 U
Chloroethane		10 U	10 U	10 U	15 U	14 U	10 U
Methylene Chloride		7 B	7 B	9 B	15 B	18 B	9 B
Acetone		2 JB	2 JB	2 JB	5 JB	9 JB	10 U
Carbon Disulfide		5 U	5 U	5 U	8 U	7 U	5 U
1,1-Dichloroethene		5 U	5 U	5 U	8 U	7 U	5 U
1,1-Dichloroethane		5 U	5 U	5 U	8 U	7 U	5 U
1,2-Dichloroethene (total)		5 U	5 U	5 U	8 U	7 U	5 U
Chloroform		5 U	5 U	5 U	8 U	7 U	5 U
1,2-Dichloroethane		5 U	5 U	5 U	8 U	7 U	5 U
2-Butanone		10 U	10 U	10 U	15 U	14 U	10 U
1,1,1-Trichloroethane		5 U	5 U	5 U	8 U	7 U	5 U
Carbon Tetrachloride		5 U	5 U	5 U	8 U	7 U	5 U
Bromodichloromethane		5 U	5 U	5 U	8 U	7 U	5 U
1,2-Dichloropropane		5 U	5 U	5 U	8 U	7 U	5 U
cis-1,3-Dichloropropene		5 U	5 U	5 U	8 U	7 U	5 U
Trichloroethene		5 U	5 U	5 U	8 U	7 U	5 U
Dibromochloromethane		5 U	5 U	5 U	8 U	7 U	5 U
1,1,2-Trichloroethane		5 U	5 U	5 U	8 U	7 U	5 U
Benzene		5 U	5 U	5 U	8 U	7 U	5 U
Trans-1,3-Dichloropropene		5 U	5 U	5 U	8 U	7 U	5 U
Bromoform		5 U	5 U	5 U	8 U	7 U	5 U
4-Methyl-2-pentanone		10 U	10 U	10 U	15 U	14 U	10 U
2-Hexanone		10 U	10 U	10 U	15 U	14 U	10 U
Tetrachloroethene		5 U	5 U	5 U	8 U	7 U	5 U
1,1,2,2-Tetrachloroethane		5 U	5 U	5 U	8 U	7 U	5 U
Toluene		5 U	5 U	5 U	8 U	7 U	5 U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9908L906 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1b

Cust ID:	B0W6B0	B0W699	B0W697	B0W694	B0W694	B0W692
RFW#:	001	002	003	004	004 REPREP	005
Chlorobenzene	5 U	5 U	5 U	8 U	7 U	5 U
Ethylbenzene	5 U	5 U	5 U	8 U	7 U	5 U
Styrene	5 U	5 U	5 U	8 U	7 U	5 U
Xylene (total)	5 U	5 U	5 U	8 U	7 U	5 U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory
Volatiles by GC/MS, HSL List

Report Date: 10/04/99 01:37

RFW Batch Number: **9908L906** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2a

	Cust ID:	B0W692		B0W692		B0W6B1		B0W693		B0W698		VBLKQA	
Sample Information	RFW#:	005 MS		005 MSD		006		007		008		99LVN266-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.04		1.04		0.962		1.00		0.980		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Toluene-d8	101	%	102	%	112	%	113	%	107	%	111	%
	Bromofluorobenzene	84	%	84	%	84	%	80	%	84	%	87	%
	1,2-Dichloroethane-d4	112	%	117	%	103	%	117	%	103	%	100	%
		fl		fl		fl		fl		fl		fl	
Chloromethane		12	U	12	U	10	U	11	U	10	U	10	U
Bromomethane		12	U	12	U	10	U	11	U	10	U	10	U
Vinyl Chloride		12	U	12	U	10	U	11	U	10	U	10	U
Chloroethane		12	U	12	U	10	U	11	U	10	U	10	U
Methylene Chloride		14	B	14	B	5	B	6	B	5	JB	8	
Acetone		5	JB	5	JB	2	JB	2	JB	2	JB	1	J
Carbon Disulfide		6	U	6	U	5	U	6	U	5	U	5	U
1,1-Dichloroethene		101	%	105	%	5	U	6	U	5	U	5	U
1,1-Dichloroethane		6	U	6	U	5	U	6	U	5	U	5	U
1,2-Dichloroethene (total)		6	U	6	U	5	U	6	U	5	U	5	U
Chloroform		6	U	6	U	5	U	6	U	5	U	5	U
1,2-Dichloroethane		6	U	6	U	5	U	6	U	5	U	5	U
2-Butanone		12	U	12	U	10	U	11	U	10	U	10	U
1,1,1-Trichloroethane		6	U	6	U	5	U	6	U	5	U	5	U
Carbon Tetrachloride		6	U	6	U	5	U	6	U	5	U	5	U
Bromodichloromethane		6	U	6	U	5	U	6	U	5	U	5	U
1,2-Dichloropropane		6	U	6	U	5	U	6	U	5	U	5	U
cis-1,3-Dichloropropene		6	U	6	U	5	U	6	U	5	U	5	U
Trichloroethene		108	%	117	%	5	U	6	U	5	U	5	U
Dibromochloromethane		6	U	6	U	5	U	6	U	5	U	5	U
1,1,2-Trichloroethane		6	U	6	U	5	U	6	U	5	U	5	U
Benzene		114	%	122	%	5	U	6	U	5	U	5	U
Trans-1,3-Dichloropropene		6	U	6	U	5	U	6	U	5	U	5	U
Bromoform		6	U	6	U	5	U	6	U	5	U	5	U
4-Methyl-2-pentanone		12	U	12	U	10	U	11	U	10	U	10	U
2-Hexanone		12	U	12	U	10	U	11	U	10	U	10	U
Tetrachloroethene		6	U	6	U	5	U	6	U	5	U	5	U
1,1,2,2-Tetrachloroethane		6	U	6	U	5	U	6	U	5	U	5	U
Toluene		123	%	130	%	5	U	6	U	5	U	5	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9908L906 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 2b

Cust ID:	B0W692	B0W692	B0W6B1	B0W693	B0W698	VBLKQA
RFW#:	005 MS	005 MSD	006	007	008	99LVN266-MB1
Chlorobenzene	111 %	118 %	5 U	6 U	5 U	5 U
Ethylbenzene	6 U	6 U	5 U	6 U	5 U	5 U
Styrene	6 U	6 U	5 U	6 U	5 U	5 U
Xylene (total)	6 U	6 U	5 U	6 U	5 U	5 U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-078

DATE RECEIVED: 08/27/99 RFW LOT # :9908L906

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W6B0	001	S	99LVN266	08/25/99	N/A	09/08/99
B0W699	002	S	99LVN266	08/25/99	N/A	09/08/99
B0W697	003	S	99LVN266	08/25/99	N/A	09/08/99
B0W694	004	S	99LVN266	08/25/99	N/A	09/08/99
B0W694	004 R1	S	99LVN266	08/25/99	N/A	09/08/99
B0W692	005	S	99LVN266	08/25/99	N/A	09/08/99
B0W692	005 MS	S	99LVN266	08/25/99	N/A	09/08/99
B0W692	005 MSD	S	99LVN266	08/25/99	N/A	09/08/99
B0W6B1	006	S	99LVN266	08/25/99	N/A	09/08/99
B0W693	007	S	99LVN266	08/25/99	N/A	09/08/99
B0W698	008	S	99LVN266	08/25/99	N/A	09/08/99

LAB QC:

VBLKQA	MB1	S	99LVN266	N/A	N/A	09/08/99

RECRA LabNet Use Only
99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) ~~perform wet lab~~ All

Client: TNU-Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: CJ
QC: Spec Del: std TAT: 30 day
Date Rec'd: 8/27/99 Date Due: 9/26/99
Account #:

Refrigerator #		1	6	1					6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1					500		250	1 qt				
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
		RECRA LabNet Use Only														
		8260 24H	8270 25H	8082 PCB	8151 Herb	8015 GC	8015 DRO		Metal 1		1 PH	Anions 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	VOA	BNA	Pest/PCB	Herb	GC	DRO		Metal	CN	1 PH	Anions
0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X		X		X	X
2	99					1051											
3	97					1004											
4	94					0926											
5	~~B1~~ 92 8/27/99					0845											
6	~~93~~ B1					1118											
7	~~98~~ 93					0909											
8	98					1032											
						Run matrix QC											

BATCH WASTE

Special Instructions:

SAF # B99-078

9/21/99 Waste code changed to Batch waste

~~8/30/99 IN3N2 cancelled~~

8/9/21/99

~~COMPOSITE WASTE~~

BATCH WASTE

DATE/REVISIONS:

Met (1) = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICR6
Anions (1) 3. ~~IN3N2~~ IN3N2, ICCL, ICFL, ICNO2, ICNO3,
8/30/99 4. ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGCSC = ethanol + propanol

*4253795287 50-4.2°C, *4235795287 49-5.1°C *4476054593 1-3.8°C

Relinquished by	Received by	Date	Time
FedEx	Janson for DS	8/27/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

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

RECRA LabNet Use Only

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-87	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0W6B0	Soil	8/25/99	11:03						X	X	X	X	X
												Bowers/N	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: [signature]	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: RF6 JB	Date/Time: 8/26/99 11:00	Received By: CTRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: FedEx	Date/Time: 8.27.99/0930	Received By: D Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE DSIGN COC

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia; Total Cyanide - 9010

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 201-21'		SAF No.: B99-078
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8749
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
02 B0W699	Soil	8/25/99	10:51						X	X	X	X	X
												Bowers	NJ

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: RFD JB	Date/Time: 8/26/99 11:00	Received By: CJRICE/Chris	Date/Time: 8/26/99 11:00
Relinquished By: CJRICE/Chris	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: D. Smith	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-84	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock; Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N; Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15'-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA/RECRA~~	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8749	
		COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix *	Sample Date	Sample Time								
003 B0W697	Soil	8/25/99	10:04						X	X	X	X	X
											Dup 541

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: RFG 1B	Date/Time: 8/26/99 11:00	Received By: CTRICE/Cfrice	Date/Time: 8/26/99 11:00
Relinquished By: CTRICE/Cfrice	Date/Time: 8/26/99 14:00	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8/27/99/0930	Received By: D. Ajmer	Date/Time: 8/27/99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

Matrix *: Soil, Water, Vapor, Other Solid, Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-81	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'	SAF No.: B99-078	
Ice Chest No.: ETC-96059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA D70 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1 67IC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
304 B0W694	Soil	8/25/99	09:26			X	X	X	X	X	~~X~~ BOW694

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter IB	Date/Time: 8/25/99/1410
Relinquished By: Peter IB	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 1400 8-26-99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: D. Smith	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-79	Page 1 of 1

Collector Bowers/Porter/Nielson	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-2 <15' bgs 10'-11'		SAF No. B99-078
Ice Chest No. ERC 96 059	Field Logbook No. EL-1511		Method of Shipment Federal Express
Shipped To ~~TMA~~/RECRA B.D. 8-25-99	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A
			COA B20CW1-671C

Price Code 8N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	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	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
205 B0W692	Soil	8/25/99	08:45			X	X	X	X	X		B0W569	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: Brent Porter, Date/Time 8/25/99/1410	Received By: Peter JB, Date/Time 8/25/99/1410	
Relinquished By: Peter J-B, Date/Time 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg 8-26-99, Date/Time 0800	
Relinquished By: R. Fahlberg / R. Fahlberg 8-26-99, Date/Time 1400	Received By: FED EX, Date/Time	
Relinquished By: Fed Ex, Date/Time 8-27-99/0930	Received By: D. Amaro, Date/Time 8-27-99/0930	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

COLLECTOR UNAVAILABLE TO SIGN COC.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 24'-25'	SAF No.: B99-078	
Ice Chest No.: EBC 96-051	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA	Offsite Property No.: ~~AF~~ A99023Ø	Bill of Lading/Air Bill No.: 4235 7952 8750	
	RE 8-26-99	COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
006 B0W6B1	Soil / 8/25/99 / 11:18						X	X	X	X	X
									Bowers		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Peter JB	Date/Time: 8/25/99/1410
Relinquished By: Kef 1.B	Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg	Date/Time: 0800 8-26-99
Relinquished By: R. Fahlberg / R. Fahlberg	Date/Time: 8-26-99 1400	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8-27-99/0930	Received By: [signature]	Date/Time: 8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-80	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 12.5'-13.5'		SAF No.: B99-078
Ice Chest No.: ERC-96-051	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 8-25-99	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8750
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

	Sample No.	Matrix *	Sample Date	Sample Time										
007	B0W693	Soil	8/25/99	09:09			X	X	X	X	X		B0W3M0	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/25/99/1410	Received By: Refer JB	Date/Time: 8/25/99/1410
Relinquished By: Ref JB	Date/Time: 8.26.99 0800	Received By: R.Fellly/R.G.Hilling	Date/Time: 0800 8.26.99
Relinquished By: R.Fellly/R.G.Hilling	Date/Time: 1400 8.26.99	Received By: Fed Ex	Date/Time:
Relinquished By: Fed Ex	Date/Time: 8.27.99/0930	Received By: D. Arnold	Date/Time: 8.27.99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196
(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010
(3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-85	Page 1 of 2

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5		SAF No.: B99-078
Ice Chest No.: ERC 96.051	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8750

Price Code: 8N

Data Turnaround: 45 Days

COA: B20CW1 + B20CW1 67IC

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix * / Sample Date / Sample Time										
308 B0W698	Soil / 8/25/99 / 10:32						X	X	X	X	X
										B0W5M1	

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: Brent Porter		8/25/99 1410
Received By: Peter JB		8/25/99 1410
Relinquished By: Peter J.B		8.26.99 0800
Received By: R. Fahlberg / R. Fahlberg		8.26.99 0800
Relinquished By: R. Fahlberg / R. Fahlberg		8.26.99 1400
Received By: Fed Ex		
Relinquished By: Fed Ex		8.27.99 0930
Received By: D. Ignatio		8.27.99 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196

(2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010

collector not available to sign coc

Matrix *
- Soil
- Water
- Vapor
- Other Solid
- Other Liquid

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