RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information

0052644

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9911L582
SDG/SAF# : H0604/B99-078

W.O.# : 10985-001-001-9999-00
Date Received: 11-02-99

RECEIVED
FEB 28 2000
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METALS CASE NARRATIVE

1. This narrative covers the analyses of 12 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 1 analyte 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:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
B0WMJ1	Antimony	100	97.1

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 29 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.

Pat E

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

1-14-00
Date

mld/m11-582

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 9911L582

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	✓6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-11/99

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

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INORGANICS DATA SUMMARY REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0WMJ1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	5.6	MG/KG	0.27	1.0
		Barium, Total	72.7	MG/KG	0.02	1.0
		Beryllium, Total	0.65	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	5.4	MG/KG	0.07	1.0
		Copper, Total	10.3	MG/KG	0.05	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.0	MG/KG	0.10	1.0
		Lead, Total	5.4	MG/KG	0.21	1.0
		Antimony, Total	0.31	MG/KG	0.21	1.0
		Selenium, Total	0.68	MG/KG	0.41	1.0
		Thallium, Total	0.43 u	MG/KG	0.43	1.0
		Vanadium, Total	29.0	MG/KG	0.06	1.0
		Zinc, Total	32.0	MG/KG	0.05	1.0
-002	B0WMJ2	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	9.9	MG/KG	0.30	1.0
		Barium, Total	101	MG/KG	0.02	1.0
		Beryllium, Total	1.2	MG/KG	0.01	1.0
		Cadmium, Total	0.12	MG/KG	0.04	1.0
		Chromium, Total	8.5	MG/KG	0.08	1.0
		Copper, Total	15.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	10.0	MG/KG	0.11	1.0
		Lead, Total	8.5	MG/KG	0.23	1.0
		Antimony, Total	0.26	MG/KG	0.23	1.0
		Selenium, Total	1.6	MG/KG	0.46	1.0
		Thallium, Total	0.48 u	MG/KG	0.48	1.0
		Vanadium, Total	46.8	MG/KG	0.07	1.0
		Zinc, Total	47.5	MG/KG	0.06	1.0

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SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0WMJ3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.0	MG/KG	0.27	1.0
		Barium, Total	38.4	MG/KG	0.02	1.0
		Beryllium, Total	0.42	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	3.9	MG/KG	0.07	1.0
		Copper, Total	7.9	MG/KG	0.05	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	4.7	MG/KG	0.10	1.0
		Lead, Total	1.9	MG/KG	0.21	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.62	MG/KG	0.42	1.0
		Thallium, Total	0.44 u	MG/KG	0.44	1.0
		Vanadium, Total	21.5	MG/KG	0.06	1.0
		Zinc, Total	19.0	MG/KG	0.05	1.0
-004	B0WMJ6	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.0	MG/KG	0.26	1.0
		Barium, Total	37.1	MG/KG	0.02	1.0
		Beryllium, Total	0.39	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	3.0	MG/KG	0.07	1.0
		Copper, Total	8.6	MG/KG	0.05	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	4.2	MG/KG	0.1	1.0
		Lead, Total	2.4	MG/KG	0.20	1.0
		Antimony, Total	0.20 u	MG/KG	0.20	1.0
		Selenium, Total	0.69	MG/KG	0.40	1.0
		Thallium, Total	0.42 u	MG/KG	0.42	1.0
		Vanadium, Total	17.0	MG/KG	0.06	1.0
		Zinc, Total	20.7	MG/KG	0.05	1.0

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SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	BOWN01	Silver, Total	1.4	MG/KG	0.08	1.0
		Arsenic, Total	5.5	MG/KG	0.28	1.0
		Barium, Total	57.9	MG/KG	0.02	1.0
		Beryllium, Total	0.76	MG/KG	0.01	1.0
		Cadmium, Total	1.4	MG/KG	0.04	1.0
		Chromium, Total	6.4	MG/KG	0.07	1.0
		Copper, Total	34.6	MG/KG	0.05	1.0
		Mercury, Total	0.34	MG/KG	0.02	1.0
		Nickel, Total	6.9	MG/KG	0.11	1.0
		Lead, Total	19.8	MG/KG	0.22	1.0
		Antimony, Total	0.24	MG/KG	0.22	1.0
		Selenium, Total	1.1	MG/KG	0.43	1.0
		Thallium, Total	0.45 u	MG/KG	0.45	1.0
		Vanadium, Total	37.9	MG/KG	0.06	1.0
		Zinc, Total	59.6	MG/KG	0.05	1.0
-006	BOWN02	Silver, Total	0.74	MG/KG	0.08	1.0
		Arsenic, Total	4.2	MG/KG	0.26	1.0
		Barium, Total	65.9	MG/KG	0.02	1.0
		Beryllium, Total	0.75	MG/KG	0.01	1.0
		Cadmium, Total	1.1	MG/KG	0.04	1.0
		Chromium, Total	5.3	MG/KG	0.07	1.0
		Copper, Total	39.9	MG/KG	0.05	1.0
		Mercury, Total	0.30	MG/KG	0.02	1.0
		Nickel, Total	6.0	MG/KG	0.1	1.0
		Lead, Total	17.8	MG/KG	0.21	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	1.0	MG/KG	0.40	1.0
		Thallium, Total	0.42 u	MG/KG	0.42	1.0
		Vanadium, Total	38.8	MG/KG	0.06	1.0
		Zinc, Total	59.0	MG/KG	0.05	1.0

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INORGANICS DATA SUMMARY REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B0WN03	Silver, Total	1.1	MG/KG	0.08	1.0
		Arsenic, Total	3.7	MG/KG	0.26	1.0
		Barium, Total	59.6	MG/KG	0.02	1.0
		Beryllium, Total	0.71	MG/KG	0.01	1.0
		Cadmium, Total	2.7	MG/KG	0.04	1.0
		Chromium, Total	5.1	MG/KG	0.07	1.0
		Copper, Total	16.4	MG/KG	0.05	1.0
		Mercury, Total	0.51	MG/KG	0.02	1.0
		Nickel, Total	6.1	MG/KG	0.1	1.0
		Lead, Total	28.5	MG/KG	0.21	1.0
		Antimony, Total	0.23	MG/KG	0.21	1.0
		Selenium, Total	0.91	MG/KG	0.40	1.0
		Thallium, Total	0.42 u	MG/KG	0.42	1.0
		Vanadium, Total	33.2	MG/KG	0.06	1.0
		Zinc, Total	45.4	MG/KG	0.05	1.0
-008	B0WN04	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.1	MG/KG	0.27	1.0
		Barium, Total	41.7	MG/KG	0.02	1.0
		Beryllium, Total	0.51	MG/KG	0.01	1.0
		Cadmium, Total	3.9	MG/KG	0.04	1.0
		Chromium, Total	3.3	MG/KG	0.07	1.0
		Copper, Total	14.1	MG/KG	0.05	1.0
		Mercury, Total	0.28	MG/KG	0.01	1.0
		Nickel, Total	4.4	MG/KG	0.1	1.0
		Lead, Total	14.9	MG/KG	0.21	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.85	MG/KG	0.41	1.0
		Thallium, Total	0.43 u	MG/KG	0.43	1.0
		Vanadium, Total	26.9	MG/KG	0.06	1.0
		Zinc, Total	33.8	MG/KG	0.05	1.0

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INORGANICS DATA SUMMARY REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	B0WN05	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	1.5	MG/KG	0.28	1.0
		Barium, Total	59.1	MG/KG	0.02	1.0
		Beryllium, Total	0.45	MG/KG	0.01	1.0
		Cadmium, Total	14.8	MG/KG	0.04	1.0
		Chromium, Total	4.1	MG/KG	0.07	1.0
		Copper, Total	12.2	MG/KG	0.05	1.0
		Mercury, Total	0.09	MG/KG	0.02	1.0
		Nickel, Total	4.7	MG/KG	0.10	1.0
		Lead, Total	14.6	MG/KG	0.21	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.74	MG/KG	0.42	1.0
		Thallium, Total	0.44 u	MG/KG	0.44	1.0
		Vanadium, Total	23.2	MG/KG	0.06	1.0
		Zinc, Total	25.4	MG/KG	0.05	1.0
-010	B0WN06	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	1.5	MG/KG	0.25	1.0
		Barium, Total	50.3	MG/KG	0.02	1.0
		Beryllium, Total	0.60	MG/KG	0.009	1.0
		Cadmium, Total	8.3	MG/KG	0.04	1.0
		Chromium, Total	3.3	MG/KG	0.07	1.0
		Copper, Total	12.1	MG/KG	0.05	1.0
		Mercury, Total	0.08	MG/KG	0.01	1.0
		Nickel, Total	5.0	MG/KG	0.09	1.0
		Lead, Total	9.7	MG/KG	0.20	1.0
		Antimony, Total	0.20 u	MG/KG	0.20	1.0
		Selenium, Total	0.92	MG/KG	0.38	1.0
		Thallium, Total	0.40 u	MG/KG	0.40	1.0
		Vanadium, Total	28.1	MG/KG	0.06	1.0
		Zinc, Total	29.6	MG/KG	0.05	1.0

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INORGANICS DATA SUMMARY REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	B0WN07	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Arsenic, Total	1.7	MG/KG	0.23	1.0
		Barium, Total	58.4	MG/KG	0.02	1.0
		Beryllium, Total	0.66	MG/KG	0.009	1.0
		Cadmium, Total	2.7	MG/KG	0.03	1.0
		Chromium, Total	5.4	MG/KG	0.06	1.0
		Copper, Total	10.6	MG/KG	0.04	1.0
		Mercury, Total	0.05	MG/KG	0.02	1.0
		Nickel, Total	7.4	MG/KG	0.09	1.0
		Lead, Total	2.1	MG/KG	0.18	1.0
		Antimony, Total	0.18 u	MG/KG	0.18	1.0
		Selenium, Total	0.98	MG/KG	0.35	1.0
		Thallium, Total	0.44	MG/KG	0.37	1.0
		Vanadium, Total	34.4	MG/KG	0.05	1.0
		Zinc, Total	29.5	MG/KG	0.04	1.0
-012	B0WN08	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Arsenic, Total	1.9	MG/KG	0.25	1.0
		Barium, Total	74.0	MG/KG	0.02	1.0
		Beryllium, Total	0.80	MG/KG	0.009	1.0
		Cadmium, Total	1.4	MG/KG	0.04	1.0
		Chromium, Total	7.8	MG/KG	0.06	1.0
		Copper, Total	11.9	MG/KG	0.05	1.0
		Mercury, Total	0.03	MG/KG	0.01	1.0
		Nickel, Total	11.4	MG/KG	0.09	1.0
		Lead, Total	2.5	MG/KG	0.19	1.0
		Antimony, Total	0.19 u	MG/KG	0.19	1.0
		Selenium, Total	1.0	MG/KG	0.37	1.0
		Thallium, Total	0.39 u	MG/KG	0.39	1.0
		Vanadium, Total	42.0	MG/KG	0.05	1.0
		Zinc, Total	32.9	MG/KG	0.05	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L0896-MB1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.27 u	MG/KG	0.27	1.0
		Barium, Total	0.02	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.10	MG/KG	0.07	1.0
		Copper, Total	0.05 u	MG/KG	0.05	1.0
		Nickel, Total	0.10 u	MG/KG	0.10	1.0
		Lead, Total	0.21 u	MG/KG	0.21	1.0
		Antimony, Total	0.21 u	MG/KG	0.21	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0
		Thallium, Total	0.43 u	MG/KG	0.43	1.0
		Vanadium, Total	0.06 u	MG/KG	0.06	1.0
		Zinc, Total	0.05 u	MG/KG	0.05	1.0
BLANK1	99C0336-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0WMJ1	Silver, Total	4.6	0.08u	5.1	90.2	1.0
		Arsenic, Total	184	5.6	205	87.3	1.0
		Barium, Total	262	72.7	205	92.4	1.0
		Beryllium, Total	5.5	0.65	5.1	95.0	1.0
		Cadmium, Total	4.5	0.04u	5.1	88.2	1.0
		Chromium, Total	26.9	5.4	20.5	104.9	1.0
		Copper, Total	34.8	10.3	25.6	95.7	1.0
		Mercury, Total	0.18	0.02u	0.17	104.7	1.0
		Nickel, Total	53.3	7.0	51.1	90.6	1.0
		Lead, Total	49.9	5.4	51.1	87.1	1.0
		Antimony, Total	29.7	0.31	51.1	57.5	1.0
		Selenium, Total	171	0.68	205	83.4	1.0
		Thallium, Total	180	0.43u	205	88.0	1.0
		Vanadium, Total	88.1	29.0	51.1	115.7	1.0
		Zinc, Total	82.0	32.0	51.1	97.8	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0WMJ1	Silver, Total	0.08u	0.08u	NC	1.0
		Arsenic, Total	5.6	5.8	3.5	1.0
		Barium, Total	72.7	71.5	1.7	1.0
		Beryllium, Total	0.65	0.76	14.8	1.0
		Cadmium, Total	0.04u	0.09	~~NC~~ 200	1.0
		Chromium, Total	5.4	6.2	13.8	1.0
		Copper, Total	10.3	10.6	2.9	1.0
		Mercury, Total	0.02u	0.02u	NC	1.0
		Nickel, Total	7.0	7.3	4.2	1.0
		Lead, Total	5.4	5.4	0.00	1.0
		Antimony, Total	0.31	0.21u	~~NC~~ 200	1.0
		Selenium, Total	0.68	1.1	47.2	1.0
		Thallium, Total	0.43u	0.44u	NC	1.0
		Vanadium, Total	29.0	35.6	20.4	1.0
		Zinc, Total	32.0	35.2	9.5	1.0

Corrections
1/13/00

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/13/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L0896-LC1	Silver, LCS	50.1	50.0	MG/KG	100.2
		Arsenic, LCS	962	1000	MG/KG	96.2
		Barium, LCS	499	500	MG/KG	99.7
		Beryllium, LCS	24.7	25.0	MG/KG	98.8
		Cadmium, LCS	24.9	25.0	MG/KG	99.6
		Chromium, LCS	51.1	50.0	MG/KG	102.2
		Copper, LCS	125	125	MG/KG	100.3
		Nickel, LCS	197	200	MG/KG	98.4
		Lead, LCS	247	250	MG/KG	98.8
		Antimony, LCS	293	300	MG/KG	97.6
		Selenium, LCS	920	1000	MG/KG	92.0
		Thallium, LCS	1000	1000	MG/KG	100.0
		Vanadium, LCS	258	250	MG/KG	103.1
		Zinc, LCS	97.1	100	MG/KG	97.1
LCS1	99C0336-LC1	Mercury, LCS	1.2	1.0	MG/KG	117.5

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1						
SILVER, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
SILVER, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
SILVER, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	001	S	99C0336	10/28/99	11/17/99	11/18/99
MERCURY, TOTAL	001 REP	S	99C0336	10/28/99	11/17/99	11/18/99
MERCURY, TOTAL	001 MS	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
NICKEL, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
NICKEL, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	001	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	001 REP	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	001 MS	S	99L0896	10/28/99	01/11/00	01/11/00
B0WMJ2						
SILVER, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	002	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	002	S	99L0896	10/28/99	01/11/00	01/11/00
B0WMJ3						
SILVER, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	003	S	99L0896	10/28/99	01/11/00	01/11/00
B0WMJ6						
SILVER, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	004	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	004	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN01						
SILVER, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	005	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	005	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN02						
SILVER, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	006	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	006	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN03						
SILVER, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	007	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	007	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN04						
SILVER, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	008	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	008	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN05						
SILVER, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	009	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
VANADIUM, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	009	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN06						
SILVER, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	010	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	010	S	99L0896	10/28/99	01/11/00	01/11/00
B0WN07						
SILVER, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	011	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	011	S	99L0896	10/28/99	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WN08						
SILVER, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
ARSENIC, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
BARIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
BERYLLIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
CADMIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
CHROMIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
COPPER, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
MERCURY, TOTAL	012	S	99C0336	10/28/99	11/17/99	11/18/99
NICKEL, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
LEAD, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
ANTIMONY, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
SELENIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
THALLIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
VANADIUM, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00
ZINC, TOTAL	012	S	99L0896	10/28/99	01/11/00	01/11/00

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
SILVER, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
ARSENIC LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
ARSENIC, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
BARIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
BARIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
BERYLLIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
BERYLLIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
CADMIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
CADMIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
CHROMIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
CHROMIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
COPPER LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
COPPER, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
MERCURY LABORATORY	LC1 BS	S	99C0336	N/A	11/17/99	11/18/99
MERCURY, TOTAL	MB1	S	99C0336	N/A	11/17/99	11/18/99
NICKEL LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
LEAD LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
LEAD, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
ANTIMONY LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
ANTIMONY, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
SELENIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
SELENIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
THALLIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
THALLIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
VANADIUM LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
VANADIUM, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00
ZINC LABORATORY	LC1 BS	S	99L0896	N/A	01/11/00	01/11/00
ZINC, TOTAL	MB1	S	99L0896	N/A	01/11/00	01/11/00

RECRA LabNet Use Only

99IIC582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

RECRA LabNet

Client: THE 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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2														
#/Type Container	Liquid																
	Solid	1g	1g							1g	1g	1g	1g				
Volume	Liquid																
	Solid	250	500							500	120	250	1L				
Preservatives																	
ANALYSES REQUESTED	ORGANIC: VOA									INORG: Metal							
	ORGANIC: BNA									INORG: CN							
	ORGANIC: Pest/PCB																
	ORGANIC: Herb																

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	8021/8260	8015/8250	8270 ORD	8080			Met ①	Ion ①	1HV2N	IPH	Sng ①
001	BOWMT 1			S	11/2/99	1227	✓	✓	✓				✓	✓	✓	✓	✓
002	2					1219											
003	3					1238											
004	6					1245											
005	BOWN01					0813									✓		
006	2					0820									✓		
007	3					0829									✓		
008	4					0845									✓		
009	5					0857									✓		
010	6					0903									✓		

Special Instructions:

Sap # B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. met① + Sng① see pg 2.
5. Run matrix QC
6.

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. 4.4 °C 4.9

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

NOTES: *42357953123O

Relinquished by	Received by	Date	Time
Ed E	K Penny	11/6/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

020

RECRA LabNet Use Only

9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU - HANFORD
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
RECRA Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #		1	2											1			
#/Type Container	Liquid																
	Solid	1g	1g							1g	1g	1g	1g				
Volume	Liquid																
	Solid	200	500							500	120	250	1tr				
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						
		RECRA LabNet Use Only															
		8260 VOA	8270 SVOC	8082 PCB						Metal	ICP/TO	HYDRA	PH	Hg			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN				
011	BOWN07			S	10/28/99	0910	✓	✓	✓					✓	✓	✓	✓	✓	
012	1 8			1		0918	✓	✓	✓					✓	✓	✓	✓	✓	

Special Instructions:

DATE/REVISIONS:
Metal 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg
Ang 3. = IN3N2, ICCL, ICFL, ICSO4, ICNO2,
4. ICNO3, ICPO4, ISFD, INH3N, ICRG
11/10/99 5. Sb + Tl added to metals
6. list per PM.

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

Relinquished by	Received by	Date	Time
Fed Ex	V. Hanly	11/8/99	0910

Relinquished by	Received by	Date	Time

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

1.20

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-488	Field Logbook No.: EL-1511		Method of Shipment: FED EX 4.4°C
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 4235795 3 1230
			COA: B20CW1 67K

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11L582

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions	See item (3) in Special Instructions		

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		B0WN01	
B0WN02	S	10-28-99	0820		X	X	X	X	X	X			
B0WN03	S	10-28-99	0829		X	X	X	X	X	X			
~~B0WN04~~	S	10-28-99	0845		X	X	X	X	X	X			
~~B0WN05~~	S	10-28-99	0857		X	X	X	X	X	X			

RT 1008

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: Chris/C TRUE		10/28/99 1430
Received By: Ref 3B		10/28/99 1430
Relinquished By: Ref 3B		10/28/99 1800
Received By: Ref 3C		10/28/99 1800
Relinquished By: Ref 3C		11.01.99 0800
Received By: R. Thoren		11.01.99 0800
Relinquished By: R. Thoren		11.01.99 1430
Received By: FEDEX		

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

0221

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148 H72074	Page 1 of 2

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.9°C
Shipped To: TMA/RECRA WAB 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1252
			COA B20CW1 67IC

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11LS82

SAMPLE ANALYSIS	Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.
Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL

Sample No.	Matrix *	Sample Date	Sample Time											
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X	BW 80
B0WN07	S	10-28-99	0910				X		X	X	X	X	X	BOW80
B0WN08	S	10-28-99	0918				X		X	X	X	X	X	↓

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Chris / CTRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10-28-99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R. Thoren	11.01.99/0800
R. Thoren	11.01.99/0 1430	FED EX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bow8C1 to ship

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

LABORATORY SECTION	Received By	Title	Date/Time
	[signature] RT 11.01.99 for VH		11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

020

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0204	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA B20 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220	
			COA: ~~B3W8C~~ B20 10-28-99 B20CW1 67/C	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None				
	Type of Container	aG	aG	aG	aG	aG	aG	aG				
	No. of Container(s)	1	1	1	1	1	1	1				
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL				
11L582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.				

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWBC1	
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: KIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: KIKKI Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Temp 2.6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

020

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H8604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA DJO 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 671C

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

11L582

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
CTRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R. Thoren R. Thoren	11.01.99/0800
R. Thoren R. Thoren	11.01.99/1430	FED EX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bow 801 to ship

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

Temp 4-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-146

Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond 3P-9		SAF No.: B99-078
Ice Chest No.: SML-429-A	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
~~BOWN01~~ Tag 11.01.99	~~Soil~~	~~10-28-99~~	~~0813~~		X	X	X	X	X	X		BOWS01	
~~BOWN02~~ Tag 11.01.99	~~S~~	~~10-28-99~~	~~0820~~		X	X	X	X	X	X			
~~BOWN03~~ Tag 11.01.99	~~S~~	~~10-28-99~~	~~0829~~		X	X	X	X	X	X			
BOWN04	S	10-28-99	0845		X	X	X	X	X	X			
BOWN05	S	10-28-99	0857		X	X	X	X	X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
C Trice/C TRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R. Thoren RIKKI THOREN	11.01.99/0800
R. THoren	11.01.99/1430	FED EX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

Tcof 3.6

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 #: 9911L582
SDG/SAF#: H0604/B99-078

W.O. #: #: 10985-001-001-9999-00
Date Received: 11-02-99

GC SCAN

The set of samples consisted of twelve (12) soil samples collected on 10-28-99.

The samples and their associated QC samples were prepared on 11-04-99 and analyzed by methodology based on EPA Method 8015B for Ethanol and 1-Propanol on 11-04,05-99.

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

5. Surrogates were not used for this analysis.

6. All blank spike recoveries were within advisory control limits of 50%-150%.

7. All matrix spike recoveries were within advisory control limits of 50%-150%.

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

11-22-99
Date

JAN 2000
RECEIVED
Data
Log In

r:\share\lc\gcscan\10-582.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 12 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 - Lionville Laboratory

GC SCAN

Report Date: 11/16/99 12:06

FW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: **10985-001-001-9999-00** Page: 1

003

	Cust ID:	B0WMJ1	B0WMJ1	B0WMJ1	B0WMJ2	B0WMJ3	B0WMJ6
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		5.0 U	119 %	115 %	5.5 U	4.9 U	5.0 U
Ethanol		5.0 U	4.9 U	5.0 U	5.5 U	4.9 U	5.0 U

	Cust ID:	B0WN01	B0WN02	B0WN03	B0WN04	B0WN05	B0WN06
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
n-Propyl Alcohol		5.5 U	5.0 U	5.5 U	4.8 U	5.0 U	5.0 U
Ethanol		5.5 U	5.0 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.

RL 11/16/99

004

	Cust ID:	B0WN07		B0WN08		BLK		BLK BS	
Sample Information	RFW#:	011		012		99LLC169-MB1		99LLC169-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	mg/kg		mg/kg		mg/kg		mg/kg	
			fl		fl		fl		fl
n-Propyl Alcohol		4.8	U	4.8	U	5.0	U	134	%
Ethanol		4.8	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.

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1	001	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WMJ1	001 MS	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WMJ1	001 MSD	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WMJ2	002	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WMJ3	003	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WMJ6	004	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WN01	005	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WN02	006	S	99LLC169	10/28/99	11/04/99	11/04/99
B0WN03	007	S	99LLC169	10/28/99	11/04/99	11/05/99
B0WN04	008	S	99LLC169	10/28/99	11/04/99	11/05/99
B0WN05	009	S	99LLC169	10/28/99	11/04/99	11/05/99
B0WN06	010	S	99LLC169	10/28/99	11/04/99	11/05/99
B0WN07	011	S	99LLC169	10/28/99	11/04/99	11/05/99
B0WN08	012	S	99LLC169	10/28/99	11/04/99	11/05/99

LAB QC:

BLK	MB1	S	99LLC169	N/A	11/04/99	11/04/99
BLK	MB1 BS	S	99LLC169	N/A	11/04/99	11/04/99

RECRA LabNet Use Only
99111582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

RECRA LabNet

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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2													
#/Type Container	Liquid															
	Solid	1g	1g						1g		1g	1g	1g			
Volume	Liquid															
	Solid	250	500						500		120	250	Ltr			
Preservatives																
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN						

RECRA LabNet Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H OGCSC	0625H ODRO	OPCB					Met①	1CNTO	1HY2N	1PH	Ing①			
001	BOWMT1			S	10/28/99	1227	✓	✓	✓					✓	✓	✓	✓	✓			
002	2					1219										✓					
003	3					1238										✓					
004	6					1245										✓					
005	BOWNO1					0813										✓					
006	2					0820										✓					
007	3					0829										✓					
008	4					0845										✓					
009	5					0857										✓					
010	6					0903										✓					

Special Instructions:

Saf # B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. met① + Ing① see pg 2.
5. Run matrix QC
6.

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. 4.4 °C 4.9

Relinquished by	Received by	Date	Time
Ed Ex	[signature]	11/2/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: *423579531230

RECRA LabNet Use Only

9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TWU-HANFORD

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

Refrigerator #		1	2										1			
#/Type Container	Liquid															
	Solid	1g	1g	1					1g	1	1g	1g	1g			
Volume	Liquid															
	Solid	250	500	1					500	1	120	250	1tr			
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
		RECRA LabNet Use Only														
		02 24H 02 SC	02 25H O DRO	OPCB					Meta①	ICNTO	1HYZN	1PH	Ang①			

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	02 24H 02 SC	02 25H O DRO	OPCB					Meta①	ICNTO	1HYZN	1PH	Ang①			
011	BOWN07			S	10/28/99	0910	✓	✓	✓					✓	✓	✓	✓	✓			
012	1 8			1		0918	✓	✓	✓					✓	✓	✓	✓	✓			

Special Instructions:

DATE/REVISIONS:
Met① 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg
Ang① 3. = IN3N2, ICCL, ICFL, ICSO4, ICNO2,
4. ICNO3, ICPO4, ISFD, IN H3N, ICRG
11/10/99 5. Sb + Tl added to metals
6. just per PM.

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/8/99	0910

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SML-458	Field Logbook No.: EL-1511	Method of Shipment: FED EX 4.4°C	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 42357953 1230	
		COA: B20CW1 67K	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11LE582

SAMPLE ANALYSIS

			Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
				Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time										
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		B0WS01	
B0WN02	S	10-28-99	0820		X	X	X	X	X	X			
B0WN03	S	10-28-99	0829		X	X	X	X	X	X			
~~B0WN04~~	S	~~10-28-99~~	~~0845~~		X	X	X	X	X	X			
~~B0WN05~~	S	~~10-28-99~~	~~0857~~		X	X	X	X	X	X			

RT 1008

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/C TRICE 10/28/99 1430	Date/Time	Received By: Ref 3B 10/28/99 1430	Date/Time
Relinquished By: Ref 3B 10/28/99 1800	Date/Time	Received By: Ref 3C 10/28/99 1800	Date/Time
Relinquished By: Ref 3C 11.01.99 0800	Date/Time	Received By: R. Thoren 11.01.99 0800	Date/Time
Relinquished By: R. Thoren 11.01.99 1430	Date/Time	Received By: FEDEX	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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: Jansen for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148	Page 1 of 2

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1	Method of Shipment: FED EX 4.9°C	
Shipped To: TMA/RECRA	Offsite Property No.: A00018	Bill of Lading/Air Bill No.: 42357953 1252	
		COA: B20CW1 67C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS	Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.

11L582

Sample No.	Matrix *	Sample Date	Sample Time											
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X	BW B4
B0WN07	S	10-28-99	0910				X		X	X	X	X	X	BW80
B0WN08	S	10-28-99	0918				X		X	X	X	X	X	↓

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris Trice	Date/Time: 10/28/99 1430	Received By: Reg 3B	Date/Time: 10/28/99 1430
Relinquished By: Reg 3B	Date/Time: 10-28-99/1800	Received By: Reg 3C	Date/Time: 10/28/99/1800
Relinquished By: Reg 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: Rikki Thoren	Date/Time: 1430	Received By: FED EX	Date/Time:
R. Thoren 11.01.99/8			

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, *Selenium, Silver*}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bowsc1 to ship

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
	RT 11.01.99 for VH		11/2/99 0910

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0204	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511-J		Method of Shipment: FED EX	
Shipped To: TMA/RECRA B23 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220	
			COA: ~~BOW 8C~~ B20CW1 67/C B20 10-28-99	

010

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
HL582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWBC1	
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: KIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: KIKKI Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

TMP 2.6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H86071	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA BJA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241	
			COA: B20CW1 671C	

011

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
BOWM JG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. THoren R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: R. THoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bew861 to ship

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

Temp 4-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-146 HD6-021

Collector: Bowers/Trice	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: 200 B pond 3P-9		SAF No.: B99-078
Ice Chest No.: SIM1-426-A	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: ~~TMA~~/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 67K

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS 11-582	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWS01	
BOWN02	S	10-28-99	0820		X	X	X	X	X	X			
BOWN03	S	10-28-99	0825		X	X	X	X	X	X			
BOWN04	S	10-28-99	0845		X	X	X	X	X	X			
BOWN05	S	10-28-99	0857		X	X	X	X	X	X			

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: Chris/C TRICE		10/28/99 1430
Received By: Ref 3B		10/28/99 1430
Relinquished By: Ref 3B		10/28/99 1800
Received By: Ref 3C		10/28/99 1800
Relinquished By: Ref 3C		11.01.99 0800
Received By: RIKKI THORSEN		11.01.99 0800
Relinquished By: R. THORSEN		11.01.99 1430
Received By: FED EX		

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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
	Ronson for VH		11/2/99 0910

FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

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

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-078
RFW# : 9911L582
SDG/SAF#: H0604/B99-078

W.O #: 10985-001-001-9999-00
Date Received: 11-02-99

DIESEL RANGE ORGANICS

The set of samples consisted of twelve (12) soil samples collected on 10-28-99.

The samples and their associated QC samples were prepared on 11-11-99 and analyzed by methodology based on EPA Method 8015B for Diesel Range Petroleum Hydrocarbons on 11-23,24-99. 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. The blank spike recovery was within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.

JAN 2000
RECEIVED
Data
Log In

for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

12-06-99
Date

r:\share\lc\gcscan\11-582d.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 12 pages.

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: 11/29/99 17:31

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: **10985-001-001-9999-00** Page: 1

003

	Cust ID:	B0WMJ1	B0WMJ1	B0WMJ1	B0WMJ2	B0WMJ3	B0WMJ6
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	91 %	92 %	93 %	78 %	84 %	77 %
Diesel Range Organics		4.2 U	100 %	108 %	4.6 U	4.1 U	4.1 U
Motor Oil		45 U	46 U	45 U	49 U	43 U	43 U

	Cust ID:	B0WN01	B0WN02	B0WN03	B0WN04	B0WN05	B0WN06
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Surrogate:	p-Terphenyl	67 %	75 %	75 %	90 %	92 %	95 %
Diesel Range Organics		4.5 U	4.3 U	4.7 U	4.2 U	4.2 U	4.2 U
Motor Oil		78	37 J	50 U	45 U	17 J	14 J

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.

12/3/99

001

	Cust ID:	B0WN07	B0WN08	BLK	BLK BS
Sample Information	RFW#:	011	012	99LE1362-MB1	99LE1362-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	mg/kg	mg/kg	mg/kg	mg/kg
Surrogate:	p-Terphenyl	101 %	90 %	82 %	92 %
Diesel Range Organics		4.2 U	4.2 U	4.0 U	84 %
Motor Oil		16 J	45 U	42 U	42 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.

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1	001	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WMJ1	001 MS	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WMJ1	001 MSD	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WMJ2	002	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WMJ3	003	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WMJ6	004	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN01	005	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN02	006	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN03	007	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN04	008	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN05	009	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN06	010	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN07	011	S	99LE1362	10/28/99	11/11/99	11/24/99
B0WN08	012	S	99LE1362	10/28/99	11/11/99	11/24/99

LAB QC:

BLK	MB1	S	99LE1362	N/A	11/11/99	11/23/99
BLK	MB1 BS	S	99LE1362	N/A	11/11/99	11/23/99

RECRA LabNet Use Only
99111582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2													
#/Type Container	Liquid															
	Solid	1g	1g						1g		1g	1g	1g			
Volume	Liquid															
	Solid	250	500						500		120	250	Ltr			
Preservatives																
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						

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	0024H OGCSC	0025H ODRO	OPCB		Met①	1CNTO	1HYZN	1PH	Ang①
001	BOWMT1			S	10/28/99	1227	✓	✓	✓		✓	✓	✓	✓	✓
002	2					1219							✓		
003	3					1238							✓		
004	6					1245							✓		
005	BOWNO1					0813							✓		
006	2					0820							✓		
007	3					0829							✓		
008	4					0845							✓		
009	5					0857							✓		
010	6					0903							✓		

RECRA LabNet Use Only

Special Instructions:

saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. met① + Ang① see pg 2.
5. Run matrix QC
6.

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. 4.4 °C 4.9

Relinquished by	Received by	Date	Time
[signature]	[signature]	11/2/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

*423579531230

1252

RECRA LabNet Use Only
9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-HANFORD
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
RECRA Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #		1	2										1				
#/Type Container	Liquid																
	Solid	1g	1g	1						1g	1	1g	1g	1g			
Volume	Liquid																
	Solid	250	500	1						500	1	120	250	1tr			
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						
		RECRA LabNet Use Only															
		8260 VOA	8270 SVOA	8270 DRO	8080 PCB					Met①	ICNTO	1HYZN	1PH	Ang①			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal	CN			
011	BOWN07			S	10/28/99	0910	✓	✓	✓					✓	✓	✓	✓	✓
012	1 8			1		0918	✓	✓	✓					✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:
1. Met① = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg
3. Ang① = IN3N2, ICCL, ICFL, ICSO4, ICNO2,
4. ICNO3, ICPO4, ISFD, IN H3N, ICRG
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	V. Henry	11/1/99	0910

Relinquished by	Received by	Date	Time

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

RECRA LabNet Use Only

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

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	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-438	Field Logbook No.: EL-1511		Method of Shipment: FED EX 4.4°C
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 4235795 3 1230
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

008

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11L582

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time									
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		B0WN01
B0WN02	S	10-28-99	0820		X	X	X	X	X	X		
B0WN03	S	10-28-99	0825		X	X	X	X	X	X		
~~B0WN04~~	S	~~10-28-99~~	0845		X	X	X	X	X	X		
~~B0WN05~~	S	~~10-28-99~~	0857		X	X	X	X	X	X		

RT 100

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By: Chris/C TRICE		10/28/99 1430
Received By: Ref 3B		10/28/99 1430
Relinquished By: Ref 3B		10/28/99 1800
Received By: Ref 3C		10/28/99 1800
Relinquished By: Ref 3C		11.01.99 0800
Received By: RIKKI Thoren R. Thoren		11.01.99 0800
Relinquished By: RIKKI Thoren R. Thoren		11.01.99 1430
Received By: FEDEX		

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148	Page 1 of 2

Collector: Bowers/Trice	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: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.9°C
Shipped To: IMA/RECRA	Offsite Property No.: A00018		Bill of Lading/Air Bill No.: 42357953 1252
			COA B20CW1 67IC

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (i-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time											
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X	BV 80
B0WN07	S	10-28-99	0910				X		X	X	X	X	X	BW 80
B0WN08	S	10-28-99	0918				X		X	X	X	X	X	↓

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris Cearlock	Date/Time: 10/28/99 1430	Received By: Reg 3B	Date/Time: 10/28/99 1430
Relinquished By: Reg 3B	Date/Time: 10-28-99/1800	Received By: Reg 3C	Date/Time: 10/28/99/1800
Relinquished By: Reg 3C	Date/Time: 11.01.99/0800	Received By: R. Thorsen	Date/Time: 11.01.99/0800
Relinquished By: Rikki Thorsen R. Thorsen	Date/Time: 1430 11.01.99/0	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (*Arsenic, Barium, Cadmium*, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bowser to ship

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

LABORATORY SECTION	Received By	Title	Date/Time
	11.01.99 for VH		11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0204	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N	Data Turnaround: 45 Days 010
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078		
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX		
Shipped To: TMA/RECRA B23 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220		
			COA: ~~BOW 8C~~ B20CW1 67/C B20 10-28-99		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
HL582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWBC1	
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

Trip 26

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H86-01	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA DJA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 671C

Price Code: 8N

Data Turnaround: 45 Days

011

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

HL582

Sample No.	Matrix *	Sample Date	Sample Time										
Bow-m JG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bow 801 to ship

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

Temp 4-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H02-021	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SMI-429-A	Field Logbook No.: EL-1511-1	Method of Shipment: FED EX	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 42357953 1241	
		COA: B20CW1 67K	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

111582

Sample No.	Matrix *	Sample Date	Sample Time										
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWN01	
BOWN02	S	10-28-99	0820		X	X	X	X	X	X			
BOWN03	S	10-28-99	0829		X	X	X	X	X	X			
BOWN04	S	10-28-99	0845		X	X	X	X	X	X			
BOWN05	S	10-28-99	0857		X	X	X	X	X	X			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C Trice/C TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren RIKKI THOREN	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Tim 3.6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

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

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-078
RFW#: 9911L582
SDG/SAF#: H0604/B99-078

W.O.#: 10985-001-001-9999-00
Date Received: 11-02-99

PCB

The set of samples consisted of twelve (12) soil samples collected on 10-28-99.

The samples and their associated QC samples were extracted on 11-10-99 and analyzed according to Recra OPs based on SW846, 3rd Edition procedures on 11-17,18-99. 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 temperature have been recorded on the chain-of-custodies.
2. All required holding times for extraction and analysis have been met.
3. The samples and their associated QC samples received a sulfuric acid and sulfur cleanup.
4. The method blank was below the reporting limits for all target compounds.
5. 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.

for

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

12-01-99
Date

JAN 2000 RECEIVED Data Log In

pef\r:\group\data\pest\11L582.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 13 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: 11/26/99 12:26

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1

004

	Cust ID:	B0WMJ1	B0WMJ1	B0WMJ1	B0WMJ2	B0WMJ3	B0WMJ6
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:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	92 %	100 %	95 %	95 %	95 %	92 %
	Decachlorobiphenyl	97 %	104 %	99 %	106 %	98 %	99 %
Aroclor-1016		35 U	35 U	35 U	38 U	34 U	34 U
Aroclor-1221		70 U	71 U	71 U	76 U	68 U	69 U
Aroclor-1232		35 U	35 U	35 U	38 U	34 U	34 U
Aroclor-1242		35 U	35 U	35 U	38 U	34 U	34 U
Aroclor-1248		35 U	35 U	35 U	38 U	34 U	34 U
Aroclor-1254		35 U	88 %	85 %	38 U	34 U	34 U
Aroclor-1260		35 U	35 U	35 U	38 U	34 U	34 U

	Cust ID:	B0WN01	B0WN02	B0WN03	B0WN04	B0WN05	B0WN06
Sample Information	RFW#:	005	006	007	008	009	010
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	98 %	90 %	82 %	75 %	82 %	75 %
	Decachlorobiphenyl	95 %	90 %	84 %	87 %	93 %	82 %
Aroclor-1016		37 U	36 U	39 U	35 U	35 U	34 U
Aroclor-1221		73 U	72 U	79 U	71 U	70 U	69 U
Aroclor-1232		37 U	36 U	39 U	35 U	35 U	34 U
Aroclor-1242		37 U	36 U	39 U	35 U	35 U	34 U
Aroclor-1248		37 U	36 U	39 U	35 U	35 U	34 U
Aroclor-1254		38	36 U	36	35 U	35 U	34 U
Aroclor-1260		37 U	36 U	39 U	35 U	35 U	34 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

gw 11-26-99

Recra LabNet - Lionville Laboratory

PCBs by GC

Report Date: 11/26/99 12:26

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2

005

	Cust ID:	B0WN07	B0WN08	PBLKZA	PBLKZA BS
Sample Information	RFW#:	011	012	99LE1360-MB1	99LE1360-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	85 %	95 %	92 %	92 %
	Decachlorobiphenyl	94 %	103 %	96 %	102 %
Aroclor-1016		34 U	35 U	33 U	33 U
Aroclor-1221		68 U	70 U	67 U	67 U
Aroclor-1232		34 U	35 U	33 U	33 U
Aroclor-1242		34 U	35 U	33 U	33 U
Aroclor-1248		34 U	35 U	33 U	33 U
Aroclor-1254		34 U	35 U	33 U	86 %
Aroclor-1260		34 U	35 U	33 U	33 U

gw 11-26-99

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: 11/02/99 RFW LOT # :9911L582

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1	001	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WMJ1	001 MS	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WMJ1	001 MSD	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WMJ2	002	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WMJ3	003	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WMJ6	004	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WN01	005	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WN02	006	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WN03	007	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WN04	008	S	99LE1360	10/28/99	11/10/99	11/17/99
B0WN05	009	S	99LE1360	10/28/99	11/10/99	11/18/99
B0WN06	010	S	99LE1360	10/28/99	11/10/99	11/18/99
B0WN07	011	S	99LE1360	10/28/99	11/10/99	11/18/99
B0WN08	012	S	99LE1360	10/28/99	11/10/99	11/18/99

LAB QC:

PBLKZA	MB1	S	99LE1360	N/A	11/10/99	11/17/99
PBLKZA	MB1 BS	S	99LE1360	N/A	11/10/99	11/17/99

pw 11-26-99

RECRA LabNet Use Only

99IL582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

RECRA LabNet

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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2																100
#/Type Container	Liquid																		
	Solid	1g	1g									1g	1g	1g	1g				
Volume	Liquid																		
	Solid	250	500									500	120	250	1 tr				
Preservatives																			
ANALYSES REQUESTED	ORGANIC: VOA											INORG: Metal							
	ORGANIC: BNA											INORG: CN							
	ORGANIC: Pest/PCB																		
	ORGANIC: Herb																		

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	8260 4/8260	8260 5H/8260	8260	Metal	Ion/TO	1H/2N	1PH	Ang
001	BOW MT 1			S	10/28/99	1227	✓	✓	✓	✓	✓	✓	✓	✓
002	2					1229						✓		
003	3					1238						✓		
004	6					1245						✓		
005	BOW NO1					0813						✓		
006	2					0820						✓		
007	3					0829						✓		
008	4					0845						✓		
009	5					0857						✓		
010	6					0903						✓		

Special Instructions:

saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. met① + Ang① see pg 2.
5. Run matrix QC
6.

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 Receipt (Y) or N

Cooler Temp. 4.4 / 4.9 C

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

NOTES:

*423579531230

Relinquished by	Received by	Date	Time
EdEc	KPenny	11/6/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

RECRA LabNet Use Only

9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-HANFORD

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

Refrigerator #		1	2										1			
#/Type Container	Liquid															
	Solid	1g	1g	1						1g	1	1g	1g	1g		
Volume	Liquid															
	Solid	250	500	1						500	1	120	250	1tr		
Preservatives																
ANALYSES REQUESTED →		ORGANIC								INORG						
		VOA	BNA	Pest/PCB	Herb					Metal	CN					
		RECRA LabNet Use Only														
		8021 24H 8260SC	8270SH 8270RO	8082PCB						Metals	ICNITO	1HNO3	1PH	Ang		

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	8021 24H 8260SC	8270SH 8270RO	8082PCB					Metals	ICNITO	1HNO3	1PH	Ang
011	BOWN07			S	10/28/99	0910	✓	✓	✓					✓	✓	✓	✓	✓
012	1 8			1		0918	✓	✓	✓					✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:

Met① 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,

2. Se, Ag, V, Zn, Hg

Ang① 3. 1N3N2, 1CCL, 1CFL, 1CSO4, 1CNO2,

4. 1CNO3, 1CPO4, 1SFD, 1NH3N, 1CRG

11/10/99 5. Sb + Be added to metals

6. list per PM.

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 Receipt Y or N
Cooler Temp. ___ C

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

Relinquished by	Received by	Date	Time
Field Ex	V. Hardy	11/2/99	0910

Relinquished by	Received by	Date	Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-438	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1230
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

4.4°C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
11L582	SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions	See item (3) in Special Instructions		

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		B0WN01	
B0WN02	S	10-28-99	0820		X	X	X	X	X	X			
B0WN03	S	10-28-99	0829		X	X	X	X	X	X			
~~B0WN04~~	~~S~~	~~10-28-99~~	~~0845~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			
~~B0WN05~~	~~S~~	~~10-28-99~~	~~0857~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~			

RT 1009

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C Trice/C TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99 0800	Received By: Rikki Thoren R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: Rikki Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FEDEX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

009

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148 H3204	Page 1 of 2

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1	Method of Shipment: FED EX	4.9°C
Shipped To: TMA/RECRA WB 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 42357953 1252	
		COA: B20CW1 67K	

010

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time											
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X	BW 801
B0WN07	S	10-28-99	0910				X		X	X	X	X	X	BW801
B0WN08	S	10-28-99	0918				X		X	X	X	X	X	↓

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10-28-99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: R Thoren	Date/Time: 11.01.99/0 1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow801 to ship

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

LABORATORY SECTION	Received By: [signature] RT 11.01.99 for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0204	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond		SAF No.: B99-078
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511 ~)		Method of Shipment: FED EX
Shipped To: TMA/RECRA C 23 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1228
			COA BOWQC B20CW1 67/C B20 10-28-99

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
11L582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWQC1	
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: RIKKI Thorsen R. Thorsen	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thorsen R. Thorsen	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; *ICP Metals - 6010A (Supertrace Add-On)* {Beryllium, Copper, Nickel, 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

TMP 7.6

LABORATORY SECTION	Received By: Jansen for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

011

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H36-01	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA DZD 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241	
			COA: B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow 8C1 to ship

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

Temp 4.6

LABORATORY SECTION	Received By: Johnson for VH	Title	Date/Time: 11/2/99 0911
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-146 HD6-021

Collector: Bowers/Trice	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: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-429-A	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 67K

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
116582 SAMPLE ANALYSIS		Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (I-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time									
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWS01
BOWN02	S	10-28-99	0820		X	X	X	X	X	X		
BOWN03	S	10-28-99	0825		X	X	X	X	X	X		
BOWN04	S	10-28-99	0845		X	X	X	X	X	X		
BOWN05	S	10-28-99	0857		X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/C TRICE 10/28/99 1430	Date/Time	Received By: Ref 3B 10/28/99 1430	Date/Time
Relinquished By: Ref 3B 10/28/99/1800	Date/Time	Received By: Ref 3C 10/28/99/1800	Date/Time
Relinquished By: Ref 3C 11.01.99/0800	Date/Time	Received By: RIKKI THOREN R. Thoren 11.01.99/0800	Date/Time
Relinquished By: R. THOREN R. Thoren 11.01.99/1430	Date/Time	Received By: FEDEX	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Temp 3.6

LABORATORY SECTION	Received By: Jansen for VH	Title	Date/Time: 11/2/99
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# : 9911L582
SDG/SAF #: H0604/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 11-02-99

SEMIVOLATILE

Twelve (12) soil samples were collected on 10-28-99.

The samples and their associated QC samples were extracted on 11-11-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270B for TCL Semivolatile target compounds on 11-24,30-99.

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. All surrogate recoveries were within EPA QC limits.

5. One (1) of twenty-two (22) matrix spike recoveries was outside EPA QC limits.

6. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.

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

8. A spectral search was conducted for the compounds Butylated Hydroxytoluene and Tributylphosphate. The Tributylphosphate was detected in sample B0WN03. This compound was reported as a non-target compound (TIC).

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

01-06-00
Date

JAN 2000
RECEIVED
Data
Log In

som\group\data\bna\tnu11582.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 30 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.

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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

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Report Date: 12/30/99 14:29 Page: 1a

	Cust ID:	B0WMJ1		B0WMJ1		B0WMJ1		B0WMJ2		B0WMJ3		B0WMJ6	
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:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	92	%	96	%	89	%	94	%	97	%	89	%
	2-Fluorobiphenyl	93	%	87	%	82	%	90	%	89	%	82	%
	Terphenyl-d14	108	%	118	%	98	%	108	%	115	%	115	%
	Phenol-d5	84	%	87	%	80	%	81	%	86	%	80	%
	2-Fluorophenol	79	%	85	%	80	%	74	%	86	%	76	%
	2,4,6-Tribromophenol	105	%	106	%	95	%	84	%	95	%	79	%
			fl		fl		fl		fl		fl		fl
Phenol		350	U	81	%	77	%	390	U	350	U	340	U
bis(2-Chloroethyl)ether		350	U	350	U	350	U	390	U	350	U	340	U
2-Chlorophenol		350	U	88	%	82	%	390	U	350	U	340	U
1,3-Dichlorobenzene		350	U	350	U	350	U	390	U	350	U	340	U
1,4-Dichlorobenzene		350	U	83	%	79	%	390	U	350	U	340	U
1,2-Dichlorobenzene		350	U	350	U	350	U	390	U	350	U	340	U
2-Methylphenol		350	U	350	U	350	U	390	U	350	U	340	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	350	U	390	U	350	U	340	U
4-Methylphenol		350	U	350	U	350	U	390	U	350	U	340	U
N-Nitroso-di-n-propylamine		350	U	103	%	101	%	390	U	350	U	340	U
Hexachloroethane		350	U	350	U	350	U	390	U	350	U	340	U
Nitrobenzene		350	U	350	U	350	U	390	U	350	U	340	U
Isophorone		350	U	350	U	350	U	390	U	350	U	340	U
2-Nitrophenol		350	U	350	U	350	U	390	U	350	U	340	U
2,4-Dimethylphenol		350	U	350	U	350	U	390	U	350	U	340	U
bis(2-Chloroethoxy)methane		350	U	350	U	350	U	390	U	350	U	340	U
2,4-Dichlorophenol		350	U	350	U	350	U	390	U	350	U	340	U
1,2,4-Trichlorobenzene		350	U	85	%	84	%	390	U	350	U	340	U
Naphthalene		350	U	350	U	350	U	390	U	350	U	340	U
4-Chloroaniline		350	U	350	U	350	U	390	U	350	U	340	U
Hexachlorobutadiene		350	U	350	U	350	U	390	U	350	U	340	U
4-Chloro-3-methylphenol		350	U	89	%	84	%	390	U	350	U	340	U
2-Methylnaphthalene		350	U	350	U	350	U	390	U	350	U	340	U
Hexachlorocyclopentadiene		350	U	350	U	350	U	390	U	350	U	340	U
2,4,6-Trichlorophenol		350	U	350	U	350	U	390	U	350	U	340	U
2,4,5-Trichlorophenol		880	U	880	U	880	U	970	U	860	U	860	U

*= Outside of EPA CLP QC limits.

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Cust ID:	B0WMJ1		B0WMJ1		B0WMJ1		B0WMJ2		B0WMJ3		B0WMJ6	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	350	U	350	U	350	U	390	U	350	U	340	U
2-Nitroaniline	880	U	880	U	880	U	970	U	860	U	860	U
Dimethylphthalate	350	U	350	U	350	U	390	U	350	U	340	U
Acenaphthylene	350	U	350	U	350	U	390	U	350	U	340	U
2,6-Dinitrotoluene	350	U	350	U	350	U	390	U	350	U	340	U
3-Nitroaniline	880	U	880	U	880	U	970	U	860	U	860	U
Acenaphthene	350	U	97	%	91	%	390	U	350	U	340	U
2,4-Dinitrophenol	880	U	880	U	880	U	970	U	860	U	860	U
4-Nitrophenol	880	U	72	%	70	%	970	U	860	U	860	U
Dibenzofuran	350	U	350	U	350	U	390	U	350	U	340	U
2,4-Dinitrotoluene	350	U	92 *	%	85	%	390	U	350	U	340	U
Diethylphthalate	350	U	350	U	350	U	390	U	350	U	340	U
4-Chlorophenyl-phenylether	350	U	350	U	350	U	390	U	350	U	340	U
Fluorene	350	U	350	U	350	U	390	U	350	U	340	U
4-Nitroaniline	880	U	880	U	880	U	970	U	860	U	860	U
4,6-Dinitro-2-methylphenol	880	U	880	U	880	U	970	U	860	U	860	U
N-Nitrosodiphenylamine (1)	350	U	350	U	350	U	390	U	350	U	340	U
4-Bromophenyl-phenylether	350	U	350	U	350	U	390	U	350	U	340	U
Hexachlorobenzene	350	U	350	U	350	U	390	U	350	U	340	U
Pentachlorophenol	880	U	97	%	88	%	970	U	860	U	860	U
Phenanthrene	350	U	350	U	350	U	390	U	350	U	340	U
Anthracene	350	U	350	U	350	U	390	U	350	U	340	U
Carbazole	350	U	350	U	350	U	390	U	350	U	340	U
Di-n-butylphthalate	350	U	350	U	350	U	390	U	350	U	340	U
Fluoranthene	350	U	350	U	350	U	390	U	350	U	340	U
Pyrene	350	U	115	%	103	%	390	U	350	U	340	U
Butylbenzylphthalate	350	U	350	U	350	U	390	U	350	U	340	U
3,3'-Dichlorobenzidine	350	U	350	U	350	U	390	U	350	U	340	U
Benzo(a)anthracene	350	U	350	U	350	U	390	U	350	U	340	U
Chrysene	350	U	350	U	350	U	390	U	350	U	340	U
bis(2-Ethylhexyl)phthalate	320	JB	350	U	160	JB	390	U	350	U	55	JB
Di-n-octyl phthalate	350	U	350	U	350	U	390	U	350	U	340	U
Benzo(b)fluoranthene	350	U	350	U	350	U	390	U	350	U	340	U
Benzo(k)fluoranthene	350	U	350	U	350	U	390	U	350	U	340	U
Benzo(a)pyrene	350	U	350	U	350	U	390	U	350	U	340	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	350	U	390	U	350	U	340	U
Dibenz(a,h)anthracene	350	U	350	U	350	U	390	U	350	U	340	U
Benzo(g,h,i)perylene	350	U	350	U	350	U	390	U	350	U	340	U

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

Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Report Date: 12/30/99 14:29 Page: 2a

	Cust ID:	B0WN01		B0WN02		B0WN03		B0WN04		B0WN05		B0WN06	
Sample Information	RFW#:	005		006		007		008		009		010	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	82	%	91	%	83	%	80	%	89	%	87	%
	2-Fluorobiphenyl	78	%	84	%	83	%	77	%	81	%	81	%
	Terphenyl-d14	100	%	99	%	95	%	101	%	99	%	106	%
	Phenol-d5	78	%	85	%	78	%	74	%	79	%	78	%
	2-Fluorophenol	77	%	85	%	78	%	70	%	75	%	73	%
	2,4,6-Tribromophenol	101	%	107	%	101	%	80	%	83	%	74	%
		fl		fl		fl		fl		fl		fl	
Phenol		380	U	360	U	400	U	350	U	350	U	350	U
bis(2-Chloroethyl)ether		380	U	360	U	400	U	350	U	350	U	350	U
2-Chlorophenol		380	U	360	U	400	U	350	U	350	U	350	U
1,3-Dichlorobenzene		380	U	360	U	400	U	350	U	350	U	350	U
1,4-Dichlorobenzene		380	U	360	U	400	U	350	U	350	U	350	U
1,2-Dichlorobenzene		380	U	360	U	400	U	350	U	350	U	350	U
2-Methylphenol		380	U	360	U	400	U	350	U	350	U	350	U
2,2'-oxybis(1-Chloropropane)		380	U	360	U	400	U	350	U	350	U	350	U
4-Methylphenol		380	U	360	U	400	U	350	U	350	U	350	U
N-Nitroso-di-n-propylamine		380	U	360	U	400	U	350	U	350	U	350	U
Hexachloroethane		380	U	360	U	400	U	350	U	350	U	350	U
Nitrobenzene		380	U	360	U	400	U	350	U	350	U	350	U
Isophorone		380	U	360	U	400	U	350	U	350	U	350	U
2-Nitrophenol		380	U	360	U	400	U	350	U	350	U	350	U
2,4-Dimethylphenol		380	U	360	U	400	U	350	U	350	U	350	U
bis(2-Chloroethoxy)methane		380	U	360	U	400	U	350	U	350	U	350	U
2,4-Dichlorophenol		380	U	360	U	400	U	350	U	350	U	350	U
1,2,4-Trichlorobenzene		380	U	360	U	400	U	350	U	350	U	350	U
Naphthalene		380	U	360	U	400	U	350	U	350	U	350	U
4-Chloroaniline		380	U	360	U	400	U	350	U	350	U	350	U
Hexachlorobutadiene		380	U	360	U	400	U	350	U	350	U	350	U
4-Chloro-3-methylphenol		380	U	360	U	400	U	350	U	350	U	350	U
2-Methylnaphthalene		380	U	360	U	400	U	350	U	350	U	350	U
Hexachlorocyclopentadiene		380	U	360	U	400	U	350	U	350	U	350	U
2,4,6-Trichlorophenol		380	U	360	U	400	U	350	U	350	U	350	U
2,4,5-Trichlorophenol		940	U	900	U	990	U	880	U	870	U	870	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2b

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Cust ID:	B0WN01		B0WN02		B0WN03		B0WN04		B0WN05		B0WN06	
RFW#:	005		006		007		008		009		010	
2-Chloronaphthalene	380	U	360	U	400	U	350	U	350	U	350	U
2-Nitroaniline	940	U	900	U	990	U	880	U	870	U	870	U
Dimethylphthalate	380	U	360	U	400	U	350	U	350	U	350	U
Acenaphthylene	380	U	360	U	400	U	350	U	350	U	350	U
2,6-Dinitrotoluene	380	U	360	U	400	U	350	U	350	U	350	U
3-Nitroaniline	940	U	900	U	990	U	880	U	870	U	870	U
Acenaphthene	380	U	360	U	400	U	350	U	350	U	350	U
2,4-Dinitrophenol	940	U	900	U	990	U	880	U	870	U	870	U
4-Nitrophenol	940	U	900	U	990	U	880	U	870	U	870	U
Dibenzofuran	380	U	360	U	400	U	350	U	350	U	350	U
2,4-Dinitrotoluene	380	U	360	U	400	U	350	U	350	U	350	U
Diethylphthalate	380	U	360	U	400	U	350	U	350	U	350	U
4-Chlorophenyl-phenylether	380	U	360	U	400	U	350	U	350	U	350	U
Fluorene	380	U	360	U	400	U	350	U	350	U	350	U
4-Nitroaniline	940	U	900	U	990	U	880	U	870	U	870	U
4,6-Dinitro-2-methylphenol	940	U	900	U	990	U	880	U	870	U	870	U
N-Nitrosodiphenylamine (1)	380	U	360	U	400	U	350	U	350	U	350	U
4-Bromophenyl-phenylether	380	U	360	U	400	U	350	U	350	U	350	U
Hexachlorobenzene	380	U	360	U	400	U	350	U	350	U	350	U
Pentachlorophenol	940	U	900	U	990	U	880	U	870	U	870	U
Phenanthrene	380	U	360	U	400	U	350	U	350	U	350	U
Anthracene	380	U	360	U	400	U	350	U	350	U	350	U
Carbazole	380	U	360	U	400	U	350	U	350	U	350	U
Di-n-butylphthalate	380	U	360	U	400	U	350	U	350	U	350	U
Fluoranthene	380	U	360	U	400	U	350	U	350	U	350	U
Pyrene	380	U	360	U	400	U	350	U	350	U	350	U
Butylbenzylphthalate	380	U	360	U	400	U	350	U	350	U	350	U
3,3'-Dichlorobenzidine	380	U	360	U	400	U	350	U	350	U	350	U
Benzo(a)anthracene	380	U	360	U	400	U	350	U	350	U	350	U
Chrysene	380	U	360	U	400	U	350	U	350	U	350	U
bis(2-Ethylhexyl)phthalate	92	JB	250	JB	400	U	41	JB	350	U	300	JB
Di-n-octyl phthalate	380	U	360	U	400	U	350	U	350	U	350	U
Benzo(b)fluoranthene	380	U	360	U	400	U	350	U	350	U	350	U
Benzo(k)fluoranthene	380	U	360	U	400	U	350	U	350	U	350	U
Benzo(a)pyrene	380	U	360	U	400	U	350	U	350	U	350	U
Indeno(1,2,3-cd)pyrene	380	U	360	U	400	U	350	U	350	U	350	U
Dibenz(a,h)anthracene	380	U	360	U	400	U	350	U	350	U	350	U
Benzo(g,h,i)perylene	380	U	360	U	400	U	350	U	350	U	350	U

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

Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Report Date: 12/30/99 14:29 Page: 3a

	Cust ID:	B0WN07		B0WN08		SBLKFY		SBLKFY BS	
Sample Information	RFW#:	011		012		99LE1363-MB1		99LE1363-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	88	%	90	%	95	%	102	%
	2-Fluorobiphenyl	84	%	84	%	99	%	93	%
	Terphenyl-d14	109	%	106	%	115	%	112	%
	Phenol-d5	81	%	78	%	83	%	90	%
	2-Fluorophenol	77	%	75	%	78	%	80	%
	2,4,6-Tribromophenol	76	%	79	%	92	%	111	%
Phenol		350	U	350	U	330	U	83	%
bis(2-Chloroethyl)ether		350	U	350	U	330	U	330	U
2-Chlorophenol		350	U	350	U	330	U	81	%
1,3-Dichlorobenzene		350	U	350	U	330	U	330	U
1,4-Dichlorobenzene		350	U	350	U	330	U	82	%
1,2-Dichlorobenzene		350	U	350	U	330	U	330	U
2-Methylphenol		350	U	350	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	330	U	330	U
4-Methylphenol		350	U	350	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	350	U	330	U	108	%
Hexachloroethane		350	U	350	U	330	U	330	U
Nitrobenzene		350	U	350	U	330	U	330	U
Isophorone		350	U	350	U	330	U	330	U
2-Nitrophenol		350	U	350	U	330	U	330	U
2,4-Dimethylphenol		350	U	350	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	350	U	330	U	330	U
2,4-Dichlorophenol		350	U	350	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	350	U	330	U	93	%
Naphthalene		350	U	350	U	330	U	330	U
4-Chloroaniline		350	U	350	U	330	U	330	U
Hexachlorobutadiene		350	U	350	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	350	U	330	U	92	%
2-Methylnaphthalene		350	U	350	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	350	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	350	U	330	U	330	U
2,4,5-Trichlorophenol		870	U	880	U	840	U	840	U

*= Outside of EPA CLP QC limits.

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Cust ID:	B0WN07		B0WN08		SBLKFY		SBLKFY BS	
RFW#:	011		012		99LE1363-MB1		99LE1363-MB1	
2-Chloronaphthalene	350	U	350	U	330	U	330	U
2-Nitroaniline	870	U	880	U	840	U	840	U
Dimethylphthalate	350	U	350	U	330	U	330	U
Acenaphthylene	350	U	350	U	330	U	330	U
2,6-Dinitrotoluene	350	U	350	U	330	U	330	U
3-Nitroaniline	870	U	880	U	840	U	840	U
Acenaphthene	350	U	350	U	330	U	91	%
2,4-Dinitrophenol	870	U	880	U	840	U	840	U
4-Nitrophenol	870	U	880	U	840	U	104	%
Dibenzofuran	350	U	350	U	330	U	330	U
2,4-Dinitrotoluene	350	U	350	U	330	U	91 *	%
Diethylphthalate	350	U	350	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	350	U	330	U	330	U
Fluorene	350	U	350	U	330	U	330	U
4-Nitroaniline	870	U	880	U	840	U	840	U
4,6-Dinitro-2-methylphenol	870	U	880	U	840	U	840	U
N-Nitrosodiphenylamine (1)	350	U	350	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	350	U	330	U	330	U
Hexachlorobenzene	350	U	350	U	330	U	330	U
Pentachlorophenol	870	U	880	U	840	U	102	%
Phenanthrene	350	U	350	U	330	U	330	U
Anthracene	350	U	350	U	330	U	330	U
Carbazole	350	U	350	U	330	U	330	U
Di-n-butylphthalate	350	U	350	U	330	U	330	U
Fluoranthene	350	U	350	U	330	U	330	U
Pyrene	350	U	350	U	330	U	103	%
Butylbenzylphthalate	350	U	350	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	350	U	330	U	330	U
Benzo(a)anthracene	350	U	350	U	330	U	330	U
Chrysene	350	U	350	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	26	JB	350	U	44	J	72	JB
Di-n-octyl phthalate	350	U	350	U	330	U	330	U
Benzo(b)fluoranthene	350	U	350	U	330	U	330	U
Benzo(k)fluoranthene	350	U	350	U	330	U	330	U
Benzo(a)pyrene	350	U	350	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	350	U	330	U	330	U
Benzo(g,h,i)perylene	350	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.

B0WMJ1

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A112416

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 6 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/24/99

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.	UNKNOWN	7.42	100	JB
2.	ALDOL CONDENSATE	7.97	300	JAB
3.	UNKNOWN	23.95	300	J
4.	UNKNOWN	27.54	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WMJ2

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A112417

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 14 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/24/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.42	200	JB
2.	ALDOL CONDENSATE	7.97	300	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WMJ3

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113005

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.41	200	JB
2.	ALDOL CONDENSATE	7.96	100	JAB
3.	UNKNOWN	23.95	90	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WMJ6

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113006

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 3 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.41	100	JB
2.	ALDOL CONDENSATE	7.96	100	JAB
3.	UNKNOWN	23.95	70	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN01

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113007

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 11 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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.	UNKNOWN	25.44	400	J
2.	UNKNOWN	25.87	1000	J
3.	UNKNOWN	27.79	1000	J
4.	UNKNOWN	28.35	500	J
5.	UNKNOWN	29.27	1000	J
6.	UNKNOWN	30.03	600	J
7.	UNKNOWN	33.66	900	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN02

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113008

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 7 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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.	UNKNOWN	7.41	200	JB
2.	ALDOL CONDENSATE	7.96	400	JAB
3.	ALDOL CONDENSATE	8.76	100	JA
4.	ALDOL CONDENSATE	9.88	200	JA
5.	UNKNOWN	23.94	200	J
6.	UNKNOWN	25.45	200	J
7.	ALKANE	27.53	300	J
8.	UNKNOWN	29.27	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN03

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113009

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 16 decanted: (Y/N) Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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.	UNKNOWN	7.40	200	JB
2.	ALDOL CONDENSATE	7.96	300	JAB
3.	UNKNOWN	16.37	100	J
4. 126-73-8	TRIBUTYLPHOSPHATE	18.25	20	JN
5.	UNKNOWN	23.94	300	J
6.	UNKNOWN	25.94	200	J
7.	UNKNOWN	27.53	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN04

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113010

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 5 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.40	100	JB
2.	ALDOL CONDENSATE	7.96	200	JAB
3.	UNKNOWN	23.94	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN05

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113011

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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.	UNKNOWN	7.40	100	JB
2.	ALDOL CONDENSATE	7.96	200	JAB
3.	UNKNOWN	23.95	100	J
4.	UNKNOWN	26.54	80	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN06

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113012

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.40	200	JB
2.	ALDOL CONDENSATE	7.96	200	JAB
3.	UNKNOWN	23.94	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN07

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-011

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113013

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 4 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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	7.30	70	JA
2.	UNKNOWN	7.41	200	JB
3.	ALDOL CONDENSATE	7.96	300	JAB
4.	UNKNOWN	23.94	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WN08

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-012

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A113014

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: 5 decanted: (Y/N) __ Date Extracted: 11/11/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/30/99

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	7.30	70	JA
2.	UNKNOWN	7.41	200	JB
3.	ALDOL CONDENSATE	7.96	300	JAB
4.	UNKNOWN	23.95	200	J

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1	001	S	99LE1363	10/28/99	11/11/99	11/24/99
B0WMJ1	001 MS	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WMJ1	001 MSD	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WMJ2	002	S	99LE1363	10/28/99	11/11/99	11/24/99
B0WMJ3	003	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WMJ6	004	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN01	005	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN02	006	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN03	007	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN04	008	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN05	009	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN06	010	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN07	011	S	99LE1363	10/28/99	11/11/99	11/30/99
B0WN08	012	S	99LE1363	10/28/99	11/11/99	11/30/99

LAB QC:

SBLKFY	MB1	S	99LE1363	N/A	11/11/99	11/24/99
SBLKFY	MB1 BS	S	99LE1363	N/A	11/11/99	11/24/99

2

RECRA LabNet Use Only
99111 582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

RECRA LabNet

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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2													
#/Type Container	Liquid															
	Solid	1g	1g						1g		1g	1g	1g			
Volume	Liquid															
	Solid	250	500						500		120	250	Ltr			
Preservatives																
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						

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 0625C	0625H 0DRO	0PCB					Met①	1CNTO	1HY2N	1PH	Ing①
001	BOWMT1			S	10/28/99	1227	✓	✓	✓					✓	✓	✓	✓	✓
002	2					1219										✓		
003	3					1238										✓		
004	6					1245										✓		
005	BOWNO1					0813										✓		
006	2					0820										✓		
007	3					0829										✓		
008	4					0845										✓		
009	5					0857										✓		
010	6					0903										✓		

Special Instructions:

Saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. Met① + Ing① see pg 2.
5. Run matrix QC
6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	11/2/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: *423579531230

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. 4.4 °C
4.9

RECRA LabNet Use Only
9911L582

Custody Transfer Record/Lab Work Request

Page 2 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

25

Client: TNU-HANFORD

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

see pg ①

Date Rec'd: Date Due:

Account #:

Refrigerator #		1	2										1			
#/Type Container	Liquid															
	Solid	1g	1g	1					1g	1	1g	1g	1g			
Volume	Liquid															
	Solid	250	500	1					500	1	120	250	Ltr			
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				Metal	CN						
		RECRA LabNet Use Only														
		0624H 0624SC	0625H 0DRO	0PCB					Met①	1CNTO	1HYZN	1PH	Ang①			
011	BOWN07			S	10/28/99	0910	✓	✓	✓				✓	✓	✓	✓	✓
012	1 8			1		0918	✓	✓	✓				✓	✓	✓	✓	✓

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

Special Instructions:

DATE/REVISIONS:

Met① 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg
Ang① 3. = 1N3N2, 1CCL, 1CFL, 1CSO4, 1CNO2
4. 1CNO3, 1CPO4, 1SFD, 1NH3N, 1CRG
11/10/99 5. Sb + Al added to metals
6. list per PM.

Relinquished by	Received by	Date	Time
Fed Ex	V. Hendy	11/2/99	0910

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

RECRA LabNet Use Only

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

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	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SML-488	Field Logbook No.: EL-1511	Method of Shipment: FED EX	4.4°C
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 4235795 3 1230	
		COA: B20CW7 67C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11L582

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions	See item (3) in Special Instructions		

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		DOWN01	
DOWN02	S	10-28-99	0820		X	X	X	X	X	X			
DOWN03	S	10-28-99	0829		X	X	X	X	X	X			
~~DOWN04~~	S	10-28-99	0845		X	X	X	X	X	X			
~~DOWN05~~	S	10-28-99	0857		X	X	X	X	X	X			

FT 1108

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/C TRICE 10/28/99 1430	Date/Time	Received By: Ref 3B 10/28/99 1430	Date/Time
Relinquished By: Ref 3B 10/28/99/1800	Date/Time	Received By: Ref 3C 10/28/99/1800	Date/Time
Relinquished By: Ref 3C 11.01.99 0800	Date/Time	Received By: RikkiThoren R.Thoren 11.01.99 0800	Date/Time
Relinquished By: RikkiThoren R.Thoren 11.01.99/1430	Date/Time	Received By: FEDEX	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) *ICP Metals* - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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: Jansen for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148 H3204	Page 1 of 2

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.9°C
Shipped To: TMA/RECRA WYB 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1252
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X
B0WN07	S	10-28-99	0910				X		X	X	X	X	X
B0WN08	S	10-28-99	0918				X		X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / C Trice	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10.28.99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: Rikki Thoren / R. Thoren	Date/Time: 11.01.99/0 1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow8C1 to ship

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

LABORATORY SECTION	Received By: [signature] 11.01.99 for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H02-04	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond		SAF No.: B99-078
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511 ~ J		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220
			COA: BOW 10-28-99 BOWSC BOCW1 67/C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
11L582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time									
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWSC1
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris CTRLE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: RIKKI Thorsen R. Thorsen	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thorsen R. Thorsen	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Temp 2.6

LABORATORY SECTION	Received By: Jensen for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H86-01	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA DJO 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 671C

Price Code: 8N

Data Turnaround: 45 Days 29

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bow 801 to ship

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

Temp 4-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H02-021	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-429-A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

111582

Sample No.	Matrix *	Sample Date	Sample Time										
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWS01	
BOWN02	S	10-28-99	0820		X	X	X	X	X	X			
BOWN03	S	10-28-99	0829		X	X	X	X	X	X			
BOWN04	S	10-28-99	0845		X	X	X	X	X	X			
BOWN05	S	10-28-99	0857		X	X	X	X	X	X			

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C Trice/C TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren RIKKI THOREN	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

Temp 3.6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
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# : 9911L582
SDG/SAF #: H0604/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 11-02-99

GC/MS VOLATILE

Twelve (12) soil samples were collected on 10-28-99.

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 11-09,10,11-99.

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 detected in sample B0WN03.

4. All surrogate recoveries were within EPA QC limits.

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

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

7. The method blanks contained the common laboratory contaminants Methylene Chloride and/or Acetone at levels less than 2x the CRQL. The method blank 99LVH542-MB1 also contained the target compound 2-Hexanone at a level less than the CRQL.

JAN 2000
RECEIVED
Data
Log In

for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

12-14-99
Date

som\group\data\voa\tnu10582.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 32 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: 12/10/99 18:53

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1a

	Cust ID:	B0WMJ1		B0WMJ1		B0WMJ1		B0WMJ2		B0WMJ3		B0WMJ6	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.06		1.04		1.02		1.00		0.893		1.04	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Toluene-d8	98	%	102	%	100	%	110	%	97	%	97	%
	Bromofluorobenzene	98	%	92	%	90	%	103	%	101	%	100	%
	1,2-Dichloroethane-d4	104	%	92	%	90	%	96	%	99	%	99	%
Chloromethane		11	U	11	U	11	U	12	U	9	U	11	U
Bromomethane		11	U	11	U	11	U	12	U	9	U	11	U
Vinyl Chloride		11	U	11	U	11	U	12	U	9	U	11	U
Chloroethane		11	U	11	U	11	U	12	U	9	U	11	U
Methylene Chloride		7	B	7	B	7	B	13	B	10	B	6	B
Acetone		11	U	11	U	11	U	8	J	9	U	11	U
Carbon Disulfide		6	U	6	U	6	U	6	U	5	U	6	U
1,1-Dichloroethene		6	U	104	%	106	%	6	U	5	U	6	U
1,1-Dichloroethane		6	U	6	U	6	U	6	U	5	U	6	U
1,2-Dichloroethene (total)		6	U	6	U	6	U	6	U	5	U	6	U
Chloroform		6	U	6	U	6	U	6	U	5	U	6	U
1,2-Dichloroethane		6	U	6	U	6	U	6	U	5	U	6	U
2-Butanone		11	U	11	U	11	U	12	U	9	U	11	U
1,1,1-Trichloroethane		6	U	6	U	6	U	6	U	5	U	6	U
Carbon Tetrachloride		6	U	6	U	6	U	6	U	5	U	6	U
Bromodichloromethane		6	U	6	U	6	U	6	U	5	U	6	U
1,2-Dichloropropane		6	U	6	U	6	U	6	U	5	U	6	U
cis-1,3-Dichloropropene		6	U	6	U	6	U	6	U	5	U	6	U
Trichloroethene		6	U	97	%	97	%	6	U	5	U	6	U
Dibromochloromethane		6	U	6	U	6	U	6	U	5	U	6	U
1,1,2-Trichloroethane		6	U	6	U	6	U	6	U	5	U	6	U
Benzene		6	U	101	%	100	%	6	U	5	U	6	U
Trans-1,3-Dichloropropene		6	U	6	U	6	U	6	U	5	U	6	U
Bromoform		6	U	6	U	6	U	6	U	5	U	6	U
4-Methyl-2-pentanone		11	U	11	U	11	U	12	U	9	U	11	U
2-Hexanone		11	U	11	U	11	U	12	U	9	U	11	U
Tetrachloroethene		6	U	6	U	6	U	6	U	5	U	6	U
1,1,2,2-Tetrachloroethane		6	U	6	U	6	U	6	U	5	U	6	U
Toluene		6	U	99	%	98	%	6	U	5	U	6	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1b

Cust ID:	B0WMJ1	B0WMJ1	B0WMJ1	B0WMJ2	B0WMJ3	B0WMJ6
RFW#:	001	001 MS	001 MSD	002	003	004
Chlorobenzene	6 U	95 %	94 %	6 U	5 U	6 U
Ethylbenzene	6 U	6 U	6 U	6 U	5 U	6 U
Styrene	6 U	6 U	6 U	6 U	5 U	6 U
Xylene (total)	6 U	6 U	6 U	6 U	5 U	6 U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 12/10/99 18:53

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2a

	Cust ID:	B0WN01		B0WN02		B0WN03		B0WN04		B0WN05		B0WN06	
Sample Information	RFW#:	005		006		007		008		009		010	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.02		0.877		1.00		1.04		0.962		1.02	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Toluene-d8	96	%	100	%	95	%	97	%	96	%	97	%
	Bromofluorobenzene	98	%	95	%	98	%	100	%	97	%	101	%
	1,2-Dichloroethane-d4	100	%	105	%	95	%	97	%	95	%	99	%
Chloromethane		12	U	10	U	12	U	11	U	10	U	11	U
Bromomethane		12	U	10	U	12	U	11	U	10	U	11	U
Vinyl Chloride		12	U	10	U	12	U	11	U	10	U	11	U
Chloroethane		12	U	10	U	12	U	11	U	10	U	11	U
Methylene Chloride		18	B	8	B	14	B	8	B	6	B	7	B
Acetone		12	U	10	U	12	U	11	U	10	U	11	U
Carbon Disulfide		6	U	5	U	6	U	6	U	5	U	6	U
1,1-Dichloroethene		6	U	5	U	6	U	6	U	5	U	6	U
1,1-Dichloroethane		6	U	5	U	6	U	6	U	5	U	6	U
1,2-Dichloroethene (total)		6	U	5	U	6	U	6	U	5	U	6	U
Chloroform		6	U	5	U	6	U	6	U	5	U	6	U
1,2-Dichloroethane		6	U	5	U	6	U	6	U	5	U	6	U
2-Butanone		12	U	10	U	12	U	11	U	10	U	11	U
1,1,1-Trichloroethane		6	U	5	U	6	U	6	U	5	U	6	U
Carbon Tetrachloride		6	U	5	U	6	U	6	U	5	U	6	U
Bromodichloromethane		6	U	5	U	6	U	6	U	5	U	6	U
1,2-Dichloropropane		6	U	5	U	6	U	6	U	5	U	6	U
cis-1,3-Dichloropropene		6	U	5	U	6	U	6	U	5	U	6	U
Trichloroethene		6	U	5	U	6	U	6	U	5	U	6	U
Dibromochloromethane		6	U	5	U	6	U	6	U	5	U	6	U
1,1,2-Trichloroethane		6	U	5	U	6	U	6	U	5	U	6	U
Benzene		6	U	5	U	6	U	6	U	5	U	6	U
Trans-1,3-Dichloropropene		6	U	5	U	6	U	6	U	5	U	6	U
Bromoform		6	U	5	U	6	U	6	U	5	U	6	U
4-Methyl-2-pentanone		12	U	10	U	12	U	11	U	10	U	11	U
2-Hexanone		12	U	10	U	12	U	11	U	10	U	11	U
Tetrachloroethene		6	U	5	U	6	U	6	U	5	U	6	U
1,1,2,2-Tetrachloroethane		6	U	5	U	6	U	6	U	5	U	6	U
Toluene		6	U	3	J	6	U	6	U	5	U	6	U

*= Outside of EPA CLP QC limits.

12-11-99

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2b

Cust ID:	B0WN01	B0WN02	B0WN03	B0WN04	B0WN05	B0WN06
RFW#:	005	006	007	008	009	010
Chlorobenzene	6 U	5 U	6 U	6 U	5 U	6 U
Ethylbenzene	6 U	5 U	6 U	6 U	5 U	6 U
Styrene	6 U	5 U	6 U	6 U	5 U	6 U
Xylene (total)	6 U	5 U	6 U	6 U	5 U	6 U

*= Outside of EPA CLP QC limits.

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 3a Report Date: 12/10/99 18:53

	Cust ID:	B0WN07		B0WN08		VBLKBC		VBLKAD		VBLKAD BS		VBLKZU	
Sample Information	RFW#:	011		012		99LVH538-MB1		99LVH539-MB1		99LVH539-MB1		99LVH542-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	Toluene-d8	96	%	96	%	96	%	98	%	99	%	98	%
	Bromofluorobenzene	100	%	101	%	100	%	95	%	98	%	94	%
	1,2-Dichloroethane-d4	96	%	99	%	97	%	95	%	101	%	85	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		6	B	12	B	8		13		15	B	2	J
Acetone		10	U	10	U	4	J	3	J	10	U	10	U
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	5	U	93	%	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	8	J	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	5	U	95	%	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	5	U	101	%	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	3	J
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Toluene		5	U	5	U	5	U	5	U	93	%	5	U

*= Outside of EPA CLP QC limits.

12-11-99

RFW Batch Number: **9911L582** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 3b

Cust ID:	B0WN07	B0WN08	VBLKBC	VBLKAD	VBLKAD BS	VBLKZU
RFW#:	011	012	99LVH538-MB1	99LVH539-MB1	99LVH539-MB1	99LVH542-MB1
Chlorobenzene	5 U	5 U	5 U	5 U	94 %	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMJ1

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-001

Sample wt/vol: 4.70 (g/mL) G Lab File ID: h110925

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 6 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 1.06

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMJ2

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-002

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h111108

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 14 Date Analyzed: 11/11/99

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

Number TICs found: 0

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

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

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMJ3

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-003

Sample wt/vol: 5.60 (g/mL) G Lab File ID: h110932

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 4 Date Analyzed: 11/10/99

Column: (pack/cap) CAP Dilution Factor: 0.893

Number TICs found: 0

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

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

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WMJ6

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-004

Sample wt/vol: 4.80 (g/mL) G Lab File ID: h110931

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 3 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 1.04

Number TICs found: 0

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

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

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN01

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-005

Sample wt/vol: 4.90 (g/mL) G Lab File ID: h110934

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 11 Date Analyzed: 11/10/99

Column: (pack/cap) CAP Dilution Factor: 1.02

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN02

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-006

Sample wt/vol: 5.70 (g/mL) G Lab File ID: h110930

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 7 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 0.877

Number TICs found: 0

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

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

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN03

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-007

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h110933

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 16 Date Analyzed: 11/10/99

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	26.364	20	J
2.	UNKNOWN	26.699	10	J

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1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN04

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-008

Sample wt/vol: 4.80 (g/mL) G Lab File ID: h110929

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 5 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 1.04

Number TICs found: 0

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

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

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN05

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-009

Sample wt/vol: 5.20 (g/mL) G Lab File ID: h110926

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 4 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 0.962

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN06

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-010

Sample wt/vol: 4.90 (g/mL) G Lab File ID: h110927

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 4 Date Analyzed: 11/09/99

Column: (pack/cap) CAP Dilution Factor: 1.02

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN07

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-011

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h110928

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 4 Date Analyzed: 11/09/99

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

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B0WN08

Lab Name: Recra.LabNet Contract: 10985001001

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

Matrix: (soil/water) SOIL Lab Sample ID: 9911L582-012

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h110935

Level: (low/med) LOW Date Received: 11/02/99

% Moisture: not dec. 5 Date Analyzed: 11/10/99

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

Number TICs found: 0

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

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

FORM 1 VOA-TIC 1/87 Rev.

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1	001	S	99LVH538	10/28/99	N/A	11/09/99
B0WMJ1	001 MS	S	99LVH539	10/28/99	N/A	11/10/99
B0WMJ1	001 MSD	S	99LVH539	10/28/99	N/A	11/10/99
B0WMJ2	002	S	99LVH542	10/28/99	N/A	11/11/99
B0WMJ3	003	S	99LVH538	10/28/99	N/A	11/10/99
B0WMJ6	004	S	99LVH538	10/28/99	N/A	11/09/99
B0WN01	005	S	99LVH538	10/28/99	N/A	11/10/99
B0WN02	006	S	99LVH538	10/28/99	N/A	11/09/99
B0WN03	007	S	99LVH538	10/28/99	N/A	11/10/99
B0WN04	008	S	99LVH538	10/28/99	N/A	11/09/99
B0WN05	009	S	99LVH538	10/28/99	N/A	11/09/99
B0WN06	010	S	99LVH538	10/28/99	N/A	11/09/99
B0WN07	011	S	99LVH538	10/28/99	N/A	11/09/99
B0WN08	012	S	99LVH538	10/28/99	N/A	11/10/99

LAB QC:

VBLKBC	MB1	S	99LVH538	N/A	N/A	11/09/99
VBLKAD	MB1	S	99LVH539	N/A	N/A	11/10/99
VBLKAD	MB1 BS	S	99LVH539	N/A	N/A	11/10/99
VBLKZU	MB1	S	99LVH542	N/A	N/A	11/11/99

12-11-99

RECRA LabNet Use Only

99IIC582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

RECRA LabNet

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 11/2/99 Date Due 12/2/99

Account #

Refrigerator #		1	2														
#/Type Container	Liquid																
	Solid	1g	1g							1g		1g	1g	1g			
Volume	Liquid																
	Solid	250	500							500		120	250	1qt			
Preservatives																	
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN						
RECRA LabNet Use Only		0024H 0026C	0025H 0DRO	0PCB						7METO	1CNTO	1HY2N	1PH	8MEQ			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0024H 0026C	0025H 0DRO	0PCB	7METO	1CNTO	1HY2N	1PH	8MEQ
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	001	BOWMT1			S	10/28/99	1227	✓	✓	✓	✓	✓	✓	✓	✓
	002	2					1229						✓		
	003	3					1238						✓		
	004	6					1245						✓		
	005	BOWNO1					0813						✓		
	006	2					0820						✓		
	007	3					0829						✓		
	008	4					0845						✓		
	009	5					0857						✓		
	010	6					0903						✓		

Special Instructions:

Saf # B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. metO + AnqO see pg 2.
5. Run matrix QC
6.

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. 4.4 °C 4.9

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: *423579531230

Relinquished by	Received by	Date	Time
EdEc	K Penny	11/6/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

RECRA LabNet Use Only
9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-HANFORD
Est. Final Proj. Sampling Date:
Project #:
Project Contact/Phone #:
RECRA Project Manager:
QC: Del: TAT:
Date Rec'd: Date Due:
Account #:

Refrigerator #		1	2										1			
#/Type Container	Liquid															
	Solid	1g	1g	1						1g	1	1g	1g	1g		
Volume	Liquid															
	Solid	200	500	1						500	1	120	250	1tr		
Preservatives																
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN							
RECRA LabNet Use Only	8260 24H	8270SC	8260 25H	8 DRO	8 PCB			Met①	ICNTO	1HYZN	1PH	Ang①				

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	8260 24H	8270SC	8260 25H	8 DRO	8 PCB	Met①	ICNTO	1HYZN	1PH	Ang①
011	BOWN07			S	10/28/99	0910	✓	✓	✓			✓	✓	✓	✓	✓
012	1 8			1		0918	✓	✓	✓			✓	✓	✓	✓	✓

Special Instructions:

DATE/REVISIONS:
Met① 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg
Ang① 3. = 1N3N2, 1CCL, 1CFL, 1CSO4, 1CNO2,
4. 1CNO3, 1CPO4, 1SFD, 1NH3N, 1CRG
11/16/99 5. Sb + Tl added to metals
6. just per PM.

Relinquished by	Received by	Date	Time
Fed Ex	V. Hardy	11/8/99	0910

Relinquished by	Received by	Date	Time

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

RECRA LabNet Use Only

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

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	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: SML-438	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.4°C	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1230	
			COA: B20CW1 67K	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11L582

Preservation			None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS			Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions	See item (3) in Special Instructions		
Sample No.	Matrix *	Sample Date	Sample Time									
B0WN01	Soil	10-28-99	0813		X	X	X	X	X	X		B0WN01
B0WN02	S	10-28-99	0820		X	X	X	X	X	X		
B0WN03	S	10-28-99	0829		X	X	X	X	X	X		
~~B0WN04~~	~~S~~	~~10-28-99~~	~~0845~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
~~B0WN05~~	~~S~~	~~10-28-99~~	~~0857~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		

RT 1109

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C Trice/C TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99 0800	Received By: R. Thoren / Rikki Thoren	Date/Time: 11.01.99/0800
Relinquished By: R. Thoren / Rikki Thoren	Date/Time: 11.01.99/1430	Received By: FEDEX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148 H32071	Page 1 of 2

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Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.9°C
Shipped To: TMA/RECRA BJB 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1252
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL), VOA - 8260A (Add-On) [1-Propanol, Ethanol]	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
BOWN06	Soil	10-28-99	0903				X		X	X	X	X	X
BOWN07	S	10-28-99	0910				X		X	X	X	X	X
BOWN08	S	10-28-99	0318				X		X	X	X	X	X

BV 80

BV 80

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10.28.99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99/0 1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow8C1 to ship

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

LABORATORY SECTION	Received By: [signature] RT 11.01.99 for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0204	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220	
			COA: ~~Bow 8C~~ B20CW1 67/C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
11L582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			Bow 8C	1
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond		SAF No.: B99-078
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 671C

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS (IL 582)	Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
B0WM1J6	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[illegible] / CTRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R. Thoren	11.01.99/0800
R. Thoren	11.01.99/1430	FEDEX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Beryllium, Copper, Nickel, 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

use Bowser to ship

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

Temp 4.6

LABORATORY SECTION	Received By: Jackson for VH	Title	Date/Time: 11/2/99 0900
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H2-6-021	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond 3P-9	SAF No.: B99-078	
Ice Chest No.: SML-429-A	Field Logbook No.: EL-1511-1	Method of Shipment: FED EX	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 4235 953 1241	
		COA: B20CW1 67K	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

111582

Sample No.	Matrix *	Sample Date	Sample Time										
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWN01	
BOWN02	S	10-28-99	0820		X	X	X	X	X	X			
BOWN03	S	10-28-99	0829		X	X	X	X	X	X			
BOWN04	S	10-28-99	0845		X	X	X	X	X	X			
BOWN05	S	10-28-99	0857		X	X	X	X	X	X			

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

Relinquished By	Date/Time	Received By	Date/Time
Chris/C TRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R Thoren / RIKKI THOREN	11.01.99/0800
R Thoren / R Thoren	11.01.99/1430	FED EX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Tim 3.6

LABORATORY SECTION	Received By	Title	Date/Time
	Janson for VH		11/2/99 0910
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# : 9911L582
SDG# : H0604
SAF# : B99-078

W.O. # : 10985-001-001-9999-00
Date Received: 11-02-99

INORGANIC CASE NARRATIVE

1. This narrative covers the analyses of 12 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 with the exception of Hydrazine which was below the control limit and may be contributed to matrix interference.

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

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

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

1-5-00
Date

njp\i11-582

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 35 pages.

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	✓ D2216-80		__ 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: Nitrate Nitrite **Method:** EPA 353.2

Other: Ammonia **Method** EPA 350.3

Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate } EPA 300.0
Hydrazine Method: USAF F33615-84-D-4400/0016

L-WI-034/B-06/99

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 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0WMJ1	% Solids	94.0		%	0.01	1.0
		Chloride by IC	2.6		MG/KG	1.3	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	1.3	u	MG/KG	1.3	1.0
		Nitrate by IC	58		MG/KG	2.7	2.0
		Cyanide, Total	0.53	u	MG/KG	0.53	1.0
		Phosphate by IC	5.4		MG/KG	1.3	1.0
		Chromium VI	0.43	u	MG/KG	0.43	1.0
		Sulfate by IC	49.7		MG/KG	1.3	1.0
		Nitrate Nitrite	12.8		MG/KG	1.0	5.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	8.7		SOIL PH	0.01	1.0
		Sulfide	4.0		MG/KG	2.1	1.0
-002	B0WMJ2	% Solids	86.1		%	0.01	1.0
		Chloride by IC	44.2		MG/KG	1.5	1.0
		Fluoride by IC	2.9	u	MG/KG	2.9	1.0
		Nitrite by IC	1.5	u	MG/KG	1.5	1.0
		Nitrate by IC	100		MG/KG	7.3	5.0
		Cyanide, Total	0.58	u	MG/KG	0.58	1.0
		Phosphate by IC	1.5	u	MG/KG	1.5	1.0
		Chromium VI	0.46	u	MG/KG	0.46	1.0
		Sulfate by IC	286		MG/KG	7.3	5.0
		Nitrate Nitrite	23.7		MG/KG	1.1	5.0
		Ammonia, as N	1.4	u	MG/KG	1.4	1.0
		pH	7.9		SOIL PH	0.01	1.0
		Sulfide	4.6		MG/KG	2.3	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0WMJ3	% Solids	96.5		%	0.01	1.0
		Chloride by IC	7.8		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	1.3	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	28.4		MG/KG	1.3	1.0
		Nitrate Nitrite	2.3		MG/KG	0.20	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	8.4		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0
-004	B0WMJ6	% Solids	96.9		%	0.01	1.0
		Chloride by IC	9.3		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	13		MG/KG	1.3	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	0.43		MG/KG	0.41	1.0
		Sulfate by IC	19.2		MG/KG	1.3	1.0
		Nitrate Nitrite	3.4		MG/KG	0.20	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	8.4		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	B0WN01	% Solids	88.6		%	0.01	1.0
		Chloride by IC	3.5		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	140		MG/KG	7.1	5.0
		Cyanide, Total	0.56	u	MG/KG	0.56	1.0
		Phosphate by IC	4.2		MG/KG	1.4	1.0
		Chromium VI	0.45	u	MG/KG	0.45	1.0
		Sulfate by IC	48.6		MG/KG	1.4	1.0
		Hydrazine	1.0	u	MG/KG	1.0	1.0
		Nitrate Nitrite	29.9		MG/KG	1.1	5.0
		Ammonia, as N	3.2		MG/KG	1.4	1.0
		pH	8.1		SOIL PH	0.01	1.0
		Sulfide	2.3	u	MG/KG	2.3	1.0
-006	B0WN02	% Solids	92.7		%	0.01	1.0
		Chloride by IC	3.0		MG/KG	1.3	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	1.3	u	MG/KG	1.3	1.0
		Nitrate by IC	89		MG/KG	6.7	5.0
		Cyanide, Total	0.54	u	MG/KG	0.54	1.0
		Phosphate by IC	4.0		MG/KG	1.3	1.0
		Chromium VI	0.43	u	MG/KG	0.43	1.0
		Sulfate by IC	34.9		MG/KG	1.3	1.0
		Hydrazine	0.94	u	MG/KG	0.94	1.0
		Nitrate Nitrite	23.9		MG/KG	0.94	5.0
		Ammonia, as N	2.5		MG/KG	1.3	1.0
		pH	8.0		SOIL PH	0.01	1.0
		Sulfide	4.5		MG/KG	2.4	1.0

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	B0WN03	% Solids	84.4		%	0.01	1.0
		Chloride by IC	2.9		MG/KG	1.5	1.0
		Fluoride by IC	3.0	u	MG/KG	3.0	1.0
		Nitrite by IC	1.5	u	MG/KG	1.5	1.0
		Nitrate by IC	87		MG/KG	7.4	5.0
		Cyanide, Total	0.59	u	MG/KG	0.59	1.0
		Phosphate by IC	1.6		MG/KG	1.5	1.0
		Chromium VI	0.47	u	MG/KG	0.47	1.0
		Sulfate by IC	29.1		MG/KG	1.5	1.0
		Hydrazine	1.1	u	MG/KG	1.1	1.0
		Nitrate Nitrite	26.7		MG/KG	1.2	5.0
		Ammonia, as N	1.5	u	MG/KG	1.5	1.0
		pH	7.9		SOIL PH	0.01	1.0
		Sulfide	2.4	u	MG/KG	2.4	1.0
-008	B0WN04	% Solids	94.5		%	0.01	1.0
		Chloride by IC	5.9		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	42		MG/KG	1.3	1.0
		Cyanide, Total	0.53	u	MG/KG	0.53	1.0
		Phosphate by IC	3.2		MG/KG	1.3	1.0
		Chromium VI	0.42	u	MG/KG	0.42	1.0
		Sulfate by IC	38.3		MG/KG	1.3	1.0
		Hydrazine	0.91	u	MG/KG	0.91	1.0
		Nitrate Nitrite	8.1		MG/KG	0.19	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	7.9		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0

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INORGANICS DATA SUMMARY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	B0WN05	% Solids	95.8		%	0.01	1.0
		Chloride by IC	1.9		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	7.5		MG/KG	1.3	1.0
		Cyanide, Total	0.52	u	MG/KG	0.52	1.0
		Phosphate by IC	1.5		MG/KG	1.3	1.0
		Chromium VI	0.42	u	MG/KG	0.42	1.0
		Sulfate by IC	15.3		MG/KG	1.3	1.0
		Hydrazine	1.1	u	MG/KG	1.1	1.0
		Nitrate Nitrite	1.8		MG/KG	0.19	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	7.5		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0
-010	B0WN06	% Solids	95.9		%	0.01	1.0
		Chloride by IC	1.7		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	7.4		MG/KG	1.3	1.0
		Cyanide, Total	0.52	u	MG/KG	0.52	1.0
		Phosphate by IC	1.4		MG/KG	1.3	1.0
		Chromium VI	0.42	u	MG/KG	0.42	1.0
		Sulfate by IC	18.3		MG/KG	1.3	1.0
		Hydrazine	1.0	u	MG/KG	1.0	1.0
		Nitrate Nitrite	1.4		MG/KG	0.18	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	7.9		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LCS102-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LFS102-MB1	Fluoride by IC	2.5 u	MG/KG	2.5	1.0
BLANK10	99L2S102-MB1	Nitrite by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99L3C103-MB1	Nitrate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	99LC123-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	99LPS102-MB1	Phosphate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LVI081-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0
BLANK10	99LZS102-MB1	Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LN3C56-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	99LAM045-MB1	Ammonia, as N	1.2 u	MG/KG	1.2	1.0

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INORGANICS DATA SUMMARY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-011	BOWN07	% Solids	95.5		%	0.01	1.0
		Chloride by IC	10.6		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	26		MG/KG	1.3	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	10.4		MG/KG	1.3	1.0
		Hydrazine	0.90	u	MG/KG	0.90	1.0
		Nitrate Nitrite	6.0		MG/KG	0.21	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	7.6		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0
-012	BOWN08	% Solids	95.3		%	0.01	1.0
		Chloride by IC	12.9		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	33		MG/KG	1.3	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	5.4		MG/KG	1.3	1.0
		Hydrazine	1.0	u	MG/KG	1.0	1.0
		Nitrate Nitrite	7.1		MG/KG	0.20	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	7.5		SOIL PH	0.01	1.0
		Sulfide	2.1	u	MG/KG	2.1	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LSDA66-MB1	Sulfide	2.0 u	MG/KG	2.0	1.0
BLANK10	99LSC103-MB1	Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LCC103-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LFC103-MB1	Fluoride by IC	2.5 u	MG/KG	2.5	1.0
BLANK10	99L2C103-MB1	Nitrite by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99L3S102-MB1	Nitrate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LPC103-MB1	Phosphate by IC	1.2 u	MG/KG	1.2	1.0
BLANK10	99LHZ003-MB1	Hydrazine	1.0 u	MG/KG	1.0	1.0
BLANK1	99LC124-MB1	Cyanide, Total	0.010u	MG/KG	0.010	1.0
BLANK10	99LVI080-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0

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INORGANICS ACCURACY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0WMJ1	Ammonia, as N	95.8	1.3 u	98.3	97.5	1.0
-003	B0WMJ3	Chloride by IC	34.6	7.8	25.9	103.7	1.0
		Fluoride by IC	55.9	0.0	51.8	107.9	1.0
		Nitrite by IC	26	1.3 u	26	102.0	1.0
		Nitrate by IC	38	11	26	105.2	1.0
		Phosphate by IC	26.8	1.3 u	25.9	103.5	1.0
		Sulfate by IC	83.3	28.4	51.8	106.0	2.0
		Nitrate Nitrite	8.3	2.3	5.0	120.8	1.0

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INORGANICS ACCURACY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-005	BOWN01	Hydrazine	25.2	1.0 u	53.0	47.6	5.0
-006	BOWN02	Soluble Chromium VI	4.2	0.43u	4.3	93.7	1.0
		Insoluble Chromium VI	1180	0.43u	1180	100.7	100

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INORGANICS ACCURACY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-012	B0WN08	Cyanide, Total	5.1	0.52u	5.2	97.1	1.0
		Sulfide	348	0.0	399	87.4	1.0
BLANK10	99LCS102-MB1	Chloride by IC	23.9	1.2 u	25.0	95.7	1.0
BLANK10	99LFS102-MB1	Fluoride by IC	52.7	2.5 u	50.0	105.4	1.0
BLANK10	99L2S102-MB1	Nitrite by IC	24	1.2 u	25	97.7	1.0
BLANK10	99L3C103-MB1	Nitrate by IC	24	1.2 u	25	97.3	1.0
BLANK10	99LPS102-MB1	Phosphate by IC	24.8	1.2 u	25.0	99.2	1.0
BLANK10	99LVI081-MB1	Soluble Chromium VI	3.9	0.40u	4.0	98.3	1.0
		Insoluble Chromium VI	1080	0.40u	1160	92.7	100
BLANK10	99LZS102-MB1	Sulfate by IC	23.7	1.2 u	25.0	94.8	1.0
BLANK10	99LN3C56-MB1	Nitrate Nitrite	5.0	0.20u	5.0	100.4	1.0
		Nitrate Nitrite MSD	4.9	0.20u	5.0	97.4	1.0
BLANK10	99LAM045-MB1	Ammonia, as N	51.4	1.2 u	50.0	102.8	1.0
		Ammonia, as N MSD	50.6	1.2 u	50.0	101.2	1.0

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INORGANICS ACCURACY REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
BLANK10	99LSDA66-MB1	Sulfide	9.5	2.0 u	10.0	95.0	1.0
BLANK10	99LSC103-MB1	Sulfate by IC	24.0	1.2 u	25.0	95.9	1.0
BLANK10	99LCC103-MB1	Chloride by IC	23.2	1.2 u	25.0	92.7	1.0
BLANK10	99LFC103-MB1	Fluoride by IC	51.8	2.5 u	50.0	103.5	1.0
BLANK10	99L2C103-MB1	Nitrite by IC	24	1.2 u	25	96.0	1.0
BLANK10	99L3S102-MB1	Nitrate by IC	23	1.2 u	25	94.0	1.0
BLANK10	99LPC103-MB1	Phosphate by IC	24.8	1.2 u	25.0	99.2	1.0
BLANK10	99LHZ003-MB1	Hydrazine	5.0	1.0 u	5.0	99.6	1.0
BLANK10	99LVI080-MB1	Soluble Chromium VI	4.0	0.40u	4.0	99.9	1.0
		Insoluble Chromium VI	1170	0.40u	1160	100.3	100

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INORGANICS DUPLICATE SPIKE REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	99LN3C56-MB1	Nitrate Nitrite	100.4	97.4	3.0
BLANK10	99LAM045-MB1	Ammonia, as N	102.8	101.2	1.5

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INORGANICS PRECISION REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0WMJ1	% Solids	94.0	93.9	0.032	1.0
		Ammonia, as N	1.3 u	1.3 u	NC	1.0
		pH	8.7	8.7	0.1	1.0
-003REP	B0WMJ3	Chloride by IC	7.8	8.2	5.8	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	11	11	6.2	1.0
		Phosphate by IC	1.3 u	1.3 u	NC	1.0
		Sulfate by IC	28.4	28.3	0.16	1.0
		Nitrate Nitrite	2.3	2.7	16.4	1.0

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INORGANICS PRECISION REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-005REP	B0WN01	Hydrazine	1.0 u	0.99u	NC	1.0
-006REP	B0WN02	Chromium VI	0.43u	0.43u	NC	1.0

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INORGANICS PRECISION REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-012REP	B0WN08	Cyanide, Total	0.52u	0.52u	NC	1.0
		Sulfide	2.1 u	3.6	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 01/04/00

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9911L582

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99LC123-LC1	Cyanide, Total LCS	9.1	10	MG/KG	90.6
LCS2	99LC123-LC2	Cyanide, Total LCS	9.1	10	MG/KG	90.6
LCS1	99LC124-LC1	Cyanide, Total LCS	9.6	10	MG/KG	96.2
LCS2	99LC124-LC2	Cyanide, Total LCS	9.6	10	MG/KG	96.2

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WMJ1						
% SOLIDS	001	S	99L%S147	10/28/99	11/03/99	11/03/99
% SOLIDS	001 REP	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	001	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	001	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	001	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	001	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	001	S	99LC123	10/28/99	11/03/99	11/03/99
PHOSPHATE BY IC	001	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	001	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	001	S	99LZS102	10/28/99	11/23/99	11/23/99
NITRATE NITRITE	001	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	001	S	99LAM045	10/28/99	11/19/99	11/19/99
AMMONIA	001 REP	S	99LAM045	10/28/99	11/19/99	11/19/99
AMMONIA	001 MS	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	001	S	99LPH120	10/28/99	11/04/99	11/04/99
PH	001 REP	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	001	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WMJ2						
% SOLIDS	002	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	002	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	002	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	002	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	002	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	002	S	99LC123	10/28/99	11/03/99	11/03/99
PHOSPHATE BY IC	002	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	002	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	002	S	99LSC103	10/28/99	11/24/99	11/24/99
NITRATE NITRITE	002	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	002	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	002	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	002	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WMJ3						
% SOLIDS	003	S	99L%S147	10/28/99	11/03/99	11/03/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	003	S	99LCS102	10/28/99	11/23/99	11/23/99
CHLORIDE BY IC	003 REP	S	99LCS102	10/28/99	11/23/99	11/23/99
CHLORIDE BY IC	003 MS	S	99LCC103	10/28/99	11/24/99	11/24/99
FLUORIDE BY IC	003	S	99LFS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	003 REP	S	99LFS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	003 MS	S	99LFC103	10/28/99	11/24/99	11/24/99
NITRITE BY IC	003	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	003 REP	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	003 MS	S	99L2C103	10/28/99	11/24/99	11/24/99
NITRATE BY IC	003	S	99L3S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	003 REP	S	99L3S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	003 MS	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	003	S	99LC123	10/28/99	11/03/99	11/03/99
PHOSPHATE BY IC	003	S	99LPS102	10/28/99	11/23/99	11/23/99
PHOSPHATE BY IC	003 REP	S	99LPS102	10/28/99	11/23/99	11/23/99
PHOSPHATE BY IC	003 MS	S	99LPC103	10/28/99	11/24/99	11/24/99
CHROMIUM VI	003	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	003	S	99LZS102	10/28/99	11/23/99	11/23/99
SULFATE BY IC	003 REP	S	99LZS102	10/28/99	11/23/99	11/23/99
SULFATE BY IC	003 MS	S	99LSC103	10/28/99	11/24/99	11/24/99
NITRATE NITRITE	003	S	99LN3C56	10/28/99	11/23/99	11/24/99
NITRATE NITRITE	003 REP	S	99LN3C56	10/28/99	11/23/99	11/24/99
NITRATE NITRITE	003 MS	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	003	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	003	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	003	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WMJ6						
% SOLIDS	004	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	004	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	004	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	004	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	004	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	004	S	99LC123	10/28/99	11/03/99	11/03/99
PHOSPHATE BY IC	004	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	004	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	004	S	99LZS102	10/28/99	11/23/99	11/23/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE NITRITE	004	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	004	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	004	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	004	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN01						
% SOLIDS	005	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	005	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	005	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	005	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	005	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	005	S	99LC123	10/28/99	11/03/99	11/03/99
PHOSPHATE BY IC	005	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	005	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	005	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	005	S	99LHZ003	10/28/99	12/30/99	12/30/99
HYDRAZINE	005 REP	S	99LHZ003	10/28/99	12/30/99	12/30/99
HYDRAZINE	005 MS	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	005	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	005	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	005	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	005	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN02						
% SOLIDS	006	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	006	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	006	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	006	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	006	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	006	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	006	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	006	S	99LVI081	10/28/99	11/06/99	11/06/99
CHROMIUM VI	006 REP	S	99LVI081	10/28/99	11/06/99	11/06/99
CHROMIUM VI	006 MS	S	99LVI081	10/28/99	11/06/99	11/06/99
CHROMIUM VI	006 MSD	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	006	S	99LZS102	10/28/99	11/23/99	11/23/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
HYDRAZINE	006	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	006	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	006	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	006	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	006	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN03						
% SOLIDS	007	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	007	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	007	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	007	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	007	S	99L3C103	10/28/99	11/24/99	11/24/99
TOTAL CYANIDE	007	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	007	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	007	S	99LVI081	10/28/99	11/06/99	11/06/99
SULFATE BY IC	007	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	007	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	007	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	007	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	007	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	007	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN04						
% SOLIDS	008	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	008	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	008	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	008	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	008	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	008	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	008	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	008	S	99LVI080	10/28/99	11/05/99	11/05/99
SULFATE BY IC	008	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	008	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	008	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	008	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	008	S	99LPH120	10/28/99	11/04/99	11/04/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SULFIDE	008	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN05						
% SOLIDS	009	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	009	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	009	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	009	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	009	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	009	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	009	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	009	S	99LVI080	10/28/99	11/05/99	11/05/99
SULFATE BY IC	009	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	009	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	009	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	009	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	009	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	009	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN06						
% SOLIDS	010	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	010	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	010	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	010	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	010	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	010	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	010	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	010	S	99LVI080	10/28/99	11/05/99	11/05/99
SULFATE BY IC	010	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	010	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	010	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	010	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	010	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	010	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN07						
% SOLIDS	011	S	99L%S147	10/28/99	11/03/99	11/03/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	011	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	011	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	011	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	011	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	011	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	011	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	011	S	99LVI080	10/28/99	11/05/99	11/05/99
SULFATE BY IC	011	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	011	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	011	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	011	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	011	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	011	S	99LSDA66	10/28/99	11/04/99	11/04/99
B0WN08						
% SOLIDS	012	S	99L%S147	10/28/99	11/03/99	11/03/99
CHLORIDE BY IC	012	S	99LCS102	10/28/99	11/23/99	11/23/99
FLUORIDE BY IC	012	S	99LFS102	10/28/99	11/23/99	11/23/99
NITRITE BY IC	012	S	99L2S102	10/28/99	11/23/99	11/23/99
NITRATE BY IC	012	S	99L3S102	10/28/99	11/23/99	11/23/99
TOTAL CYANIDE	012	S	99LC124	10/28/99	11/06/99	11/06/99
TOTAL CYANIDE	012 REP	S	99LC124	10/28/99	11/06/99	11/06/99
TOTAL CYANIDE	012 MS	S	99LC124	10/28/99	11/06/99	11/06/99
PHOSPHATE BY IC	012	S	99LPS102	10/28/99	11/23/99	11/23/99
CHROMIUM VI	012	S	99LVI080	10/28/99	11/05/99	11/05/99
SULFATE BY IC	012	S	99LZS102	10/28/99	11/23/99	11/23/99
HYDRAZINE	012	S	99LHZ003	10/28/99	12/30/99	12/30/99
NITRATE NITRITE	012	S	99LN3C56	10/28/99	11/23/99	11/24/99
AMMONIA	012	S	99LAM045	10/28/99	11/19/99	11/19/99
PH	012	S	99LPH120	10/28/99	11/04/99	11/04/99
SULFIDE	012	S	99LSDA66	10/28/99	11/04/99	11/04/99
SULFIDE	012 REP	S	99LSDA66	10/28/99	11/04/99	11/04/99
SULFIDE	012 MS	S	99LSDA66	10/28/99	11/04/99	11/04/99

LAB QC:

CHLORIDE BY IC	MB1	S	99LCS102	N/A	11/23/99	11/23/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHLORIDE BY IC	MB1 BS	S	99LCS102	N/A	11/23/99	11/23/99
FLUORIDE BY IC	MB1	S	99LFS102	N/A	11/23/99	11/23/99
FLUORIDE BY IC	MB1 BS	S	99LFS102	N/A	11/23/99	11/23/99
NITRITE BY IC	MB1	S	99L2S102	N/A	11/23/99	11/23/99
NITRITE BY IC	MB1 BS	S	99L2S102	N/A	11/23/99	11/23/99
NITRATE BY IC	MB1	S	99L3C103	N/A	11/24/99	11/24/99
NITRATE BY IC	MB1 BS	S	99L3C103	N/A	11/24/99	11/24/99
TOTAL CYANIDE	LC1 L	S	99LC123	N/A	11/03/99	11/03/99
TOTAL CYANIDE	LC2 L	S	99LC123	N/A	11/03/99	11/03/99
TOTAL CYANIDE	MB1	S	99LC123	N/A	11/03/99	11/03/99
PHOSPHATE BY IC	MB1	S	99LPS102	N/A	11/23/99	11/23/99
PHOSPHATE BY IC	MB1 BS	S	99LPS102	N/A	11/23/99	11/23/99
CHROMIUM VI	MB1	S	99LVI081	N/A	11/06/99	11/06/99
CHROMIUM VI	MB1 BS	S	99LVI081	N/A	11/06/99	11/06/99
CHROMIUM VI	MB1 BSD	S	99LVI081	N/A	11/06/99	11/06/99
SULFATE BY IC	MB1	S	99LZS102	N/A	11/23/99	11/23/99
SULFATE BY IC	MB1 BS	S	99LZS102	N/A	11/23/99	11/23/99
NITRATE NITRITE	MB1	S	99LN3C56	N/A	11/23/99	11/24/99
NITRATE NITRITE	MB1 BS	S	99LN3C56	N/A	11/23/99	11/24/99
NITRATE NITRITE	MB1 BSD	S	99LN3C56	N/A	11/23/99	11/24/99
AMMONIA	MB1	S	99LAM045	N/A	11/19/99	11/19/99
AMMONIA	MB1 BS	S	99LAM045	N/A	11/19/99	11/19/99
AMMONIA	MB1 BSD	S	99LAM045	N/A	11/19/99	11/19/99
SULFIDE	MB1	S	99LSDA66	N/A	11/04/99	11/04/99
SULFIDE	MB1 BS	S	99LSDA66	N/A	11/04/99	11/04/99
SULFATE BY IC	MB1	S	99LSC103	N/A	11/24/99	11/24/99
SULFATE BY IC	MB1 BS	S	99LSC103	N/A	11/24/99	11/24/99
CHLORIDE BY IC	MB1	S	99LCC103	N/A	11/24/99	11/24/99
CHLORIDE BY IC	MB1 BS	S	99LCC103	N/A	11/24/99	11/24/99
FLUORIDE BY IC	MB1	S	99LFC103	N/A	11/24/99	11/24/99
FLUORIDE BY IC	MB1 BS	S	99LFC103	N/A	11/24/99	11/24/99
NITRITE BY IC	MB1	S	99L2C103	N/A	11/24/99	11/24/99
NITRITE BY IC	MB1 BS	S	99L2C103	N/A	11/24/99	11/24/99
NITRATE BY IC	MB1	S	99L3S102	N/A	11/23/99	11/23/99
NITRATE BY IC	MB1 BS	S	99L3S102	N/A	11/23/99	11/23/99
PHOSPHATE BY IC	MB1	S	99LPC103	N/A	11/24/99	11/24/99
PHOSPHATE BY IC	MB1 BS	S	99LPC103	N/A	11/24/99	11/24/99
HYDRAZINE	MB1	S	99LHZ003	N/A	12/30/99	12/30/99

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

DATE RECEIVED: 11/02/99 RFW LOT # :9911L582

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
HYDRAZINE	MB1 BS	S	99LHZ003	N/A	12/30/99	12/30/99
TOTAL CYANIDE	LC1 L	S	99LC124	N/A	11/06/99	11/06/99
TOTAL CYANIDE	LC2 L	S	99LC124	N/A	11/06/99	11/06/99
TOTAL CYANIDE	MB1	S	99LC124	N/A	11/06/99	11/06/99
CHROMIUM VI	MB1	S	99LVI080	N/A	11/05/99	11/05/99
CHROMIUM VI	MB1 BS	S	99LVI080	N/A	11/05/99	11/05/99
CHROMIUM VI	MB1 BSD	S	99LVI080	N/A	11/05/99	11/05/99

RECRA LabNet Use Only
9911C582

Custody Transfer Record/Lab Work Request

Page 1 of 2

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: THE 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: 11/2/99 Date Due: 12/2/99

Account #:

Refrigerator #		1	2													
#/Type Container	Liquid															
	Solid	1g	1g							1g	1g	1g	1g			
Volume	Liquid															
	Solid	250	500							500	120	250	Ltr			
Preservatives																
ANALYSES REQUESTED	ORGANIC: VOA								INORG: Metal							
	ORGANIC: BNA								CN							
	ORGANIC: Pest/PCB															
	ORGANIC: Herb															

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	00244 0625C	0025H 0DRO	0PCB	Metl	10NTC	1HY2N	1PH	Ang
001	BOWMT1			S	10/28/99	1227	✓	✓	✓	✓	✓	✓	✓	✓
002	2					1229								
003	3					1238								
004	6					1245								
005	BOWN01					0813						✓		
006	2					0820						✓		
007	3					0829						✓		
008	4					0845						✓		
009	5					0857						✓		
010	6					0903						✓		

Special Instructions:

saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. samples 8+9 crossed
2. off on client COC, but
3. rec'd.
4. metl + Ang ① see pg 2.
5. Run matrix QC
6.

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. 4.4 °C

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

NOTES:

*423579531230 → 4.9 °C

1252 2.6

1220 ...3579531 2.4 11.4°C

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	11/6/99	0910

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

RECRA LabNet Use Only

9911L582

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-HANFORD

Est. Final Proj. Sampling Date:

Project #:

Project Contact/Phone #:

RECRA Project Manager:

QC: Del: TAT:

Date Rec'd: Date Due:

Account #:

Refrigerator #		1	2										1				
#/Type Container	Liquid																
	Solid	1g	1g	1						1g	1	1g	1g	1g			
Volume	Liquid																
	Solid	250	500	1						500	1	120	250	1tr			
Preservatives																	
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest/PCB	Herb					INORG							
										Metal	CN						
	RECRA LabNet Use Only	62 24H	62 25SC	62 25H	0 DRO	0 PCB				Met①	ICP/TO	1HYZN	1PH	Ang①			

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	62 24H	62 25SC	62 25H	0 DRO	0 PCB				Met①	ICP/TO	1HYZN	1PH	Ang①			
011	BOWN07			S	10/28/99	0910	✓	✓	✓						✓	✓	✓	✓	✓			
012	1 8			1		0918	✓	✓	✓						✓	✓	✓	✓	✓			

Special Instructions:

DATE/REVISIONS:

Met① 1. = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,

2. Se, Ag, V, Zn, Hg

Ang① 3. = 1N3N2, 1CCL, 1CFL, 1CSO4, 1CNO2,

4. 1CNO3, 1CPO4, 1SFD, 1NH3N, 1CRG

5.

6.

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'd Y or N

Cooler Temp. °C

Relinquished by	Received by	Date	Time
Fed Ex	V. Henry	11/1/99	0910

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-146 H0604	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9	SAF No.: B99-078	
Ice Chest No.: SML-488	Field Logbook No.: EL-1511	Method of Shipment: FED EX 4.4°C	
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018	Bill of Lading/Air Bill No.: 42357953 1230	
		COA: B20CW1 67K	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

11L582

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
SAMPLE ANALYSIS	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			
Sample No. / Matrix * / Sample Date / Sample Time											
B0WN01 / Soil / 10-28-99 / 0813		X	X	X	X	X	X		B0WS01		
B0WN02 / S / 10-28-99 / 0820		X	X	X	X	X	X				
B0WN03 / S / 10-28-99 / 0829		X	X	X	X	X	X				
~~B0WN04 / S / 10-28-99 / 0845~~		X	X	X	X	X	X				
~~B0WN05 / S / 10-28-99 / 0857~~		X	X	X	X	X	X				

RT 100%

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/C TRICE 10/28/99 1430	Received By: Ref 3B 10/28/99 1430		
Relinquished By: Ref 3B 10/28/99/1800	Received By: Ref 3C 10/28/99/1800		
Relinquished By: Ref 3C 11.01.99 0800	Received By: RIKKI Thoren R.Thoren 11.01.99/0800		
Relinquished By: RIKKI Thoren R.Thoren 11.01.99/1430	Received By: FEDEX		

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) *ICP Metals - 6010A (Supertrace)* {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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: Jansen for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-148 H3204	Page 1 of 2

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML 363	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX 4.9°C
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1252
			COA: B20CW1 67K

Price Code: 8N

Data Turnaround: 45 Days

032

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time											
B0WN06	Soil	10-28-99	0903				X		X	X	X	X	X	BW 801
B0WN07	S	10-28-99	0910				X		X	X	X	X	X	BOW801
B0WN08	S	10-28-99	0918				X		X	X	X	X	X	↓

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 10.28.99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: R. Thoren	Date/Time: 11.01.99/0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99/0 1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow801 to ship

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

LABORATORY SECTION	Received By: [signature] RT 11.01.99 for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144 H0604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078	Data Turnaround: 45 Days
Ice Chest No.: ERC 96 024	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA B23 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1220	
			COA: ~~BOW 8C~~ B20CW1 67/C B20 10-28-99	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None			
	Type of Container	aG	aG	aG	aG	aG	aG	aG			
	No. of Container(s)	1	1	1	1	1	1	1			
Special Handling and/or Storage	Volume	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL			
11L582 SAMPLE ANALYSIS		Isotopic Uranium	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ1	Soil	10-28-99	1227		X	X	X	X	X			BOWRC1	
BOWMJ2	S	10-28-99	1219		X	X	X	X	X			↓	
BOWMJ3	S	10-28-99	1238		X	X	X	X	X			↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: REF 3B	Date/Time: 10/28/99/1800	Received By: Ref 3C	Date/Time: 10/28/99/1800
Relinquished By: Ref 3C	Date/Time: 11.01.99/0800	Received By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time:

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Temp 2.6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-145 H8604	Page 1 of 1

Collector: Bowers/Trice	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: 200 B pond		SAF No.: B99-078
Ice Chest No.: SML 429A	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX
Shipped To: TMA/RECRA DJ 10-28-99	Offsite Property No.: A000018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 671C

Price Code: 8N

Data Turnaround: 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
11L582 SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJG	Soil	10-28-99	1245					X	X	X	X	X	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
[signature] / CTRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	R. Thoren / R. Thoren	11.01.99/0800
R. Thoren / R. Thoren	11.01.99/1430	FED EX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow 8C1 to ship

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

Temp 4-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B99-078-146 HD6-07

Collector: Bowers/Trice	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: 200 B pond BP-9		SAF No.: B99-078
Ice Chest No.: SML-424-A	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: TMA/RECRA 10-28-99	Offsite Property No.: A00018		Bill of Lading/Air Bill No.: 42357953 1241
			COA: B20CW1 67K

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS 11L582	Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time									
BOWN01	Soil	10-28-99	0813		X	X	X	X	X	X		BOWN01
BOWN02	S	10-28-99	0820		X	X	X	X	X	X		
BOWN03	S	10-28-99	0835		X	X	X	X	X	X		
BOWN04	S	10-28-99	0845		X	X	X	X	X	X		
BOWN05	S	10-28-99	0857		X	X	X	X	X	X		

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

Relinquished By	Date/Time	Received By	Date/Time
Chris/C TRICE	10/28/99 1430	Ref 3B	10/28/99 1430
Ref 3B	10/28/99/1800	Ref 3C	10/28/99/1800
Ref 3C	11.01.99/0800	KIKKI THOREN / R Thoren	11.01.99/0800
R. THOREN	11.01.99/1430	FEDEX	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

Tech 3-6

LABORATORY SECTION	Received By: Janson for VH	Title	Date/Time: 11/2/99 0910
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

H 2604- TM A/RECR

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H0604 was composed of seven solid 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 Thermo Retec Sample Receipt Checklist. The results were transmitted to BHI via facsimile on January 20, 2000.

2.0 ANALYSIS NOTES

JAN 2000
RECEIVED
Data
Log In

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.3 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.5 Isotopic Thorium Analyses

No problems were encountered during the course of the analyses.

2.6 Total Uranium Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Uranium Analyses

BHI did not request any of the samples be analyzed for Isotopic Uranium after reporting the Total Uranium results on November 27, 1999 via facsimile.

2.8 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses.

2.9 Americium-241 Analyses

Due to low yields samples B0WMJ2 (18%, 7276-02), B0WN02 (18%, 7276-06), and B0WN03 (15%, 7276-07) were reworked in the laboratory. The reworked samples had satisfactory yields within the protocol limits. The reworked data is reported in this data package. No other problems were encountered during the course of the analyses.

2.10 Gamma Spec Analyses

No problems were encountered during the course of the analyses.

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

SAMPLE SUMMARY

SDG 7267
Contact Melissa C. Mannion

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
B0WMJ1	200 B Pond	SOLID		N911026-01	B99-078	B99-078-144	10/28/99 12:27
B0WMJ2	200 B Pond	SOLID		N911026-02	B99-078	B99-078-144	10/28/99 12:19
B0WMJ3	200 B Pond	SOLID		N911026-03	B99-078	B99-078-144	10/28/99 12:38
B0WMJ6	200 B Pond	SOLID		N911026-04	B99-078	B99-078-145	10/28/99 12:45
B0WN01	200 B Pond	SOLID		N911026-05	B99-078	B99-078-146	10/28/99 08:13
B0WN02	200 B Pond	SOLID		N911026-06	B99-078	B99-078-146	10/28/99 08:20
B0WN03	200 B Pond	SOLID		N911026-07	B99-078	B99-078-146	10/28/99 08:29
B0WN04	200 B Pond	SOLID		N911026-08	B99-078	B99-078-146	10/28/99 08:45
B0WN05	200 B Pond	SOLID		N911026-09	B99-078	B99-078-146	10/28/99 08:57
B0WN06	200 B Pond	SOLID		N911026-10	B99-078	B99-078-148	10/28/99 09:03
B0WN07	200 B Pond	SOLID		N911026-11	B99-078	B99-078-148	10/28/99 09:10
B0WN08	200 B Pond	SOLID		N911026-12	B99-078	B99-078-148	10/28/99 09:18
Method Blank		SOLID		N910196-10	B99-078		
Method Blank		SOLID		N911026-14	B99-078		
Method Blank		SOLID		N911026-18	B99-078		
Lab Control Sample		SOLID		N910196-09	B99-078		
Lab Control Sample		SOLID		N911026-13	B99-078		
Lab Control Sample		SOLID		N911026-17	B99-078		
Duplicate (N911026-01)	200 B Pond	SOLID		N911026-19	B99-078		10/28/99 12:27
Duplicate (N911026-04)	200 B Pond	SOLID		N911026-15	B99-078		10/28/99 12:45
Spike (N911026-10)	200 B Pond	SOLID		N911026-16	B99-078		10/28/99 09:03
Spike (N911026-10)	200 B Pond	SOLID		N911026-21	B99-078		10/28/99 09:03

Lab id TMANC
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TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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
7257		Method Blank	SOLID						N910196-10	7257-010
		Lab Control Sample	SOLID						N910196-09	7257-009
7267	B99-078-144	B0WMJ1	SOLID	93.9			11/02/99	5	N911026-01	7267-001
		B0WMJ2	SOLID	84.5			11/02/99	5	N911026-02	7267-002
		B0WMJ3	SOLID	96.5			11/02/99	5	N911026-03	7267-003
	B99-078-145	B0WMJ6	SOLID	96.5			11/02/99	5	N911026-04	7267-004
	B99-078-146	B0WN01	SOLID	86.3			11/02/99	5	N911026-05	7267-005
		B0WN02	SOLID	87.7			11/02/99	5	N911026-06	7267-006
		B0WN03	SOLID	85.5			11/02/99	5	N911026-07	7267-007
		B0WN04	SOLID	94.2			11/02/99	5	N911026-08	7267-008
		B0WN05	SOLID	95.9			11/02/99	5	N911026-09	7267-009
	B99-078-148	B0WN06	SOLID	95.9			11/02/99	5	N911026-10	7267-010
		B0WN07	SOLID	95.5			11/02/99	5	N911026-11	7267-011
		B0WN08	SOLID	94.9			11/02/99	5	N911026-12	7267-012
		Method Blank	SOLID						N911026-14	7267-014
		Method Blank	SOLID						N911026-18	7267-018
		Lab Control Sample	SOLID						N911026-13	7267-013
		Lab Control Sample	SOLID						N911026-17	7267-017
		Duplicate (N911026-01)	SOLID				11/02/99	5	N911026-19	7267-019
		Duplicate (N911026-04)	SOLID				11/02/99	5	N911026-15	7267-015
		Spike (N911026-10)	SOLID				11/02/99	5	N911026-16	7267-016
		Spike (N911026-10)	SOLID				11/02/99	5	N911026-21	7267-021

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TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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	6909-012	5.0	12			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6909-012	5.0	12			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Soil	6909-012	5.0	12			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	6909-012	10.0	12			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	6904-172	10.0	4			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6909-012	15.0	12			1	1	1/1		
Kinetic Phosphorimetry												
U_T	SOLID	Uranium, Total in Soil	6909-012	9.0	12			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	6909-012	10.0	4			1	1	1/1	1/1	
NI_L	SOLID	Nickel 63 in Soil	6909-012	10.0	4			1	1	1/1	1/1	

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

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SAMPLE DELIVERY GROUP H0604

WORK SUMMARY

SDG 7267
Contact Melissa C. Mannion

Client Hanford
Contract TRB-SRB-207925
Case no SDG H0604

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0WMJ1			N911026-01	7267-001	AM		01/18/00	01/19/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-001	GAM		12/17/99	01/18/00	MCM	Gamma Scan
B99-078-144	B99-078		11/02/99	7267-001	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-001	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-001	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-001	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WMJ2			N911026-02	7267-002	AM	A0R1	01/21/00	01/24/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-002	GAM		12/20/99	01/18/00	MCM	Gamma Scan
B99-078-144	B99-078		11/02/99	7267-002	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-002	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-002	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-002	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WMJ3			N911026-03	7267-003	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-003	GAM		12/20/99	01/18/00	MCM	Gamma Scan
B99-078-144	B99-078		11/02/99	7267-003	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-003	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-003	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-003	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WMJ6			N911026-04	7267-004	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-004	GAM		12/20/99	01/18/00	MCM	Gamma Scan
B99-078-145	B99-078		11/02/99	7267-004	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-004	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-004	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-004	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-004	TC		12/28/99	01/18/00	MCM	Technetium 99 in Soil
				7267-004	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-004	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN01			N911026-05	7267-005	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-005	GAM		12/21/99	01/18/00	MCM	Gamma Scan
B99-078-146	B99-078		11/02/99	7267-005	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-005	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-005	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-005	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil

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TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0WN02			N911026-06	7267-006	AM	A0R1	01/21/00	01/24/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-006	GAM		12/21/99	01/18/00	MCM	Gamma Scan
B99-078-146	B99-078		11/02/99	7267-006	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-006	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-006	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-006	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN03			N911026-07	7267-007	AM	A0R1	01/21/00	01/24/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-007	GAM		12/21/99	01/18/00	MCM	Gamma Scan
B99-078-146	B99-078		11/02/99	7267-007	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-007	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-007	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-007	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN04			N911026-08	7267-008	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-008	GAM		12/21/99	01/18/00	MCM	Gamma Scan
B99-078-146	B99-078		11/02/99	7267-008	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-008	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-008	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-008	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN05			N911026-09	7267-009	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-009	GAM		12/22/99	01/18/00	MCM	Gamma Scan
B99-078-146	B99-078		11/02/99	7267-009	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-009	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-009	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-009	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN06			N911026-10	7267-010	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-010	GAM		12/22/99	01/18/00	MCM	Gamma Scan
B99-078-148	B99-078		11/02/99	7267-010	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-010	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-010	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-010	SR		01/11/00	01/19/00	MCM	Total Strontium in Soil
				7267-010	TC		12/30/99	01/18/00	MCM	Technetium 99 in Soil
				7267-010	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-010	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil

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TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
B0WN07			N911026-11	7267-011	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-011	GAM		12/22/99	01/18/00	MCM	Gamma Scan
B99-078-148	B99-078		11/02/99	7267-011	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-011	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-011	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-011	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-011	TC		12/29/99	01/18/00	MCM	Technetium 99 in Soil
				7267-011	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-011	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
B0WN08			N911026-12	7267-012	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-012	GAM		12/22/99	01/18/00	MCM	Gamma Scan
B99-078-148	B99-078		11/02/99	7267-012	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-012	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-012	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-012	SR		01/11/00	01/19/00	MCM	Total Strontium in Soil
				7267-012	TC		12/28/99	01/18/00	MCM	Technetium 99 in Soil
				7267-012	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
				7267-012	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
Method Blank			N910196-10	7257-010	TC		12/28/99	01/07/00	NJV	Technetium 99 in Soil
		SOLID								
	B99-078									
Method Blank			N911026-14	7267-014	AM		01/15/00	01/18/00	MCM	Americium 241 in Soil
		SOLID		7267-014	GAM		12/27/99	01/18/00	MCM	Gamma Scan
	B99-078			7267-014	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-014	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-014	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-014	SR		01/12/00	01/18/00	MCM	Total Strontium in Soil
				7267-014	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
Method Blank			N911026-18	7267-018	U_T		12/18/99	01/18/00	MCM	Uranium, Total in Soil
		SOLID								
	B99-078									
Lab Control Sample			N910196-09	7257-009	TC		12/27/99	01/07/00	NJV	Technetium 99 in Soil
		SOLID								
	B99-078									

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SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	LAB SAMPLE ID / COLLECTED / RECEIVED	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
Lab Control Sample			N911026-13	7267-013	AM		01/14/00	01/18/00	MCM	Americium 241 in Soil
		SOLID		7267-013	GAM		12/22/99	01/18/00	MCM	Gamma Scan
	B99-078			7267-013	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-013	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-013	PU		01/12/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-013	SR		01/12/00	01/18/00	MCM	Total Strontium in Soil
				7267-013	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
Lab Control Sample			N911026-17	7267-017	U_T		12/18/99	01/18/00	MCM	Uranium, Total in Soil
		SOLID								
	B99-078									
Duplicate (N911026-01)			N911026-19	7267-019	U_T		11/18/99	01/18/00	MCM	Uranium, Total in Soil
200 B Pond		SOLID	10/28/99							
	B99-078		11/02/99							
Duplicate (N911026-04)			N911026-15	7267-015	AM		01/15/00	01/18/00	MCM	Americium 241 in Soil
200 B Pond		SOLID	10/28/99	7267-015	GAM		12/27/99	01/18/00	MCM	Gamma Scan
	B99-078		11/02/99	7267-015	H		01/09/00	01/18/00	MCM	Tritium in Soil
				7267-015	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
				7267-015	PU		01/14/00	01/18/00	MCM	Plutonium, Isotopic in Solids
				7267-015	SR		01/11/00	01/18/00	MCM	Total Strontium in Soil
				7267-015	TC		12/29/99	01/18/00	MCM	Technetium 99 in Soil
				7267-015	TH		01/14/00	01/18/00	MCM	Thorium, Isotopic in Soil
Spike (N911026-10)			N911026-16	7267-016	H		01/09/00	01/18/00	MCM	Tritium in Soil
200 B Pond		SOLID	10/28/99							
	B99-078		11/02/99							
Spike (N911026-10)			N911026-21	7267-021	NI_L		01/16/00	01/18/00	MCM	Nickel 63 in Soil
200 B Pond		SOLID	10/28/99							
	B99-078		11/02/99							

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SAMPLE DELIVERY GROUP H0604

SDG 7267
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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	12			1	1	1		15
GAM	B99-078	Gamma Scan	GAMMAHI	12			1	1	1		15
H	B99-078	Tritium in Soil	EPA906.0	4			1	1	1	1	8
NI_L	B99-078	Nickel 63 in Soil	NI63LSC	4			1	1	1	1	8
PU	B99-078	Plutonium, Isotopic in Solids	PUPLATE	12			1	1	1		15
SR	B99-078	Total Strontium in Soil	SRTOTAL	12			1	1	1		15
TC	B99-078	Technetium 99 in Soil	TC99TRLSC	4			1	1	1		7
TH	B99-078	Thorium, Isotopic in Soil	THPLATE	12			1	1	1		15
U_T	B99-078	Uranium, Total in Soil	UKPA	12			1	1	1		15
TOTALS				84			9	9	9	2	113

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SAMPLE DELIVERY GROUP H0604

N910196-10

Method Blank

METHOD BLANK

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N910196-10	Client sample id	Method Blank
Dept sample id	7257-010	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	N.A.			400		H
Technetium 99	14133-76-7	-0.099	0.24	0.72	15	U	TC
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	N.A.			30		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 Chara. - 200-CW-1 OU

QC-BLANK 32742

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-14

Method Blank

METHOD BLANK

SDG	7267	Client/Case no	Hanford	SDG H0604	
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925		
Lab sample id	N911026-14	Client sample id	Method Blank		
Dept sample id	7267-014	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	-0.089	0.12	0.20	400	U	H
Plutonium 238	13981-16-3	0.006	0.036	0.071	1.0	U	PU
Plutonium 239/240	PU-239/240	-0.024	0.024	0.055	1.0	U	PU
Nickel 63	13981-37-8	-0.346	1.2	2.0	30	U	NI_L
Americium 241	14596-10-2	-0.031	0.031	0.096	1.0	U	AM
Total Strontium	SR-RAD	-0.101	0.25	0.35	1.0	U	SR
Thorium 228	14274-82-9	-0.017	0.10	0.24	1.0	U	TH
Thorium 230	14269-63-7	0.017	0.14	0.21	1.0	U	TH
Thorium 232	TH-232	0.017	0.034	0.13	1.0	U	TH
Potassium 40	13966-00-2	U		1.5		U	GAM
Cobalt 60	10198-40-0	U		0.055	0.050	U	GAM
Cesium 137	10045-97-3	U		0.056	0.10	U	GAM
Europium 152	14683-23-9	U		0.14	0.10	U	GAM
Europium 154	15585-10-1	U		0.16	0.10	U	GAM
Europium 155	14391-16-3	U		0.10	0.10	U	GAM
Radium 226	13982-63-3	U		0.11	0.10	U	GAM
Radium 228	15262-20-1	U		0.24	0.20	U	GAM
Thorium 228	14274-82-9	U		0.071		U	GAM
Thorium 232	TH-232	U		0.24		U	GAM
Americium 241	14596-10-2	U		0.056		U	GAM
Uranium 238	U-238	U		5.9		U	GAM
Uranium 235	15117-96-1	U		0.16		U	GAM

200 Area Source Chara. - 200-CW-1 OU

QC-BLANK 32824

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-18

Method Blank

METHOD BLANK

SDG	7267	Client/Case no	Hanford	SDG H0604	
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925		
Lab sample id	N911026-18	Client sample id	Method Blank		
Dept sample id	7267-018	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
Total Uranium (ug/g)	7440-61-1	0	0.002	0.004	1.0	U	U_T

200 Area Source Chara. - 200-CW-1 OU

QC-BLANK 32393

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N910196-09

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7267

Contact Melissa C. Mannion

Client/Case no Hanford SDG H0604

Case no TRB-SBB-207925

Lab sample id N910196-09

Dept sample id 7257-009

Client sample id Lab Control Sample

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	N.A.			400		H					80-120
Technetium 99	42.8	1.6	0.56	15		TC	42.7	1.7	100	83-117	80-120
Plutonium 238	N.A.			1.0		PU					80-120
Plutonium 239/240	N.A.			1.0		PU					80-120
Nickel 63	N.A.			30		NI_L					
Americium 241	N.A.			1.0		AM					80-120
Total Strontium	N.A.			1.0		SR					
Thorium 228	N.A.			1.0		TH					
Thorium 230	N.A.			1.0		TH					
Thorium 232	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 Chara. - 200-CW-1 OU

QC-LCS 32741

Lab id TMANC

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-13

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7267

Contact Melissa C. Mannion

Client/Case no Hanford SDG H0604

Case no TRB-SBB-207925

Lab sample id N911026-13

Dept sample id 7267-013

Client sample id Lab Control Sample

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	12.2	0.34	0.20	400	J	H	12.7	0.51	96	84-116	80-120
Plutonium 238	12.3	0.78	0.050	1.0		PU	12.5	0.50	98	87-113	80-120
Plutonium 239/240	12.5	0.78	0.044	1.0		PU	13.2	0.53	95	87-113	80-120
Nickel 63	153	3.8	2.0	30		NI_L	147	5.9	104	83-117	
Americium 241	10.5	0.72	0.035	1.0		AM	11.5	0.46	91	87-113	80-120
Total Strontium	27.4	0.81	0.32	1.0		SR	24.8	0.99	110	82-118	
Thorium 228	0.085	0.13	0.26	1.0	U	TH					
Thorium 230	22.2	2.0	0.16	1.0		TH	22.4	0.90	99	84-116	
Thorium 232	0.043	0.043	0.16	1.0	U	TH					
Cobalt 60	1.38	0.065	0.031	0.050		GAM	1.49	0.060	93	77-123	80-120
Cesium 137	1.66	0.058	0.034	0.10		GAM	1.65	0.066	101	76-124	80-120

200 Area Source Chara. - 200-CW-1 OU

QC-LCS 32823

Lab id TMANC

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-17

Lab Control Sample

LAB CONTROL SAMPLE

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Case no	TRB-SBB-207925
Lab sample id	N911026-17	Client sample id	Lab Control Sample
Dept sample id	7267-017	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
Total Uranium (ug/g)	35.6	4.7	0.039	1.0		U_T	37.2	1.5	96	76-124	80-120

200 Area Source Chara. - 200-CW-1 OU

QC-LCS 32392

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LCS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-19 B0WMJ1

DUPLICATE

SDG	7267			Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion			Case no	TRB-SBB-207925
	DUPLICATE		ORIGINAL		
Lab sample id	N911026-19	Lab sample id	N911026-01	Client sample id	B0WMJ1
Dept sample id	7267-019	Dept sample id	7267-001	Location/Matrix	200 B Pond SOLID
		Received	11/02/99	Collected	10/28/99 12:27
		% solids	93.9	Custody/SAF No	B99-078-144 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
Total Uranium (ug/g)	0.564	0.072	0.004	1.0	J	U_T	0.529	0.068	0.004	J	6	33	

200 Area Source Chara. - 200-CW-1 OU

QC-DUP#1 32394

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-15 B0WMJ6

DUPLICATE

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Case no	TRB-SBB-207925
DUPLICATE		ORIGINAL	
Lab sample id	N911026-15	Lab sample id	N911026-04
Dept sample id	7267-015	Dept sample id	7267-004
		Received	11/02/99
		% solids	96.5
		Client sample id	B0WMJ6
		Location/Matrix	200 B Pond SOLID
		Collected	10/28/99 12:45
		Custody/SAF No	B99-078-145 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	-0.037	0.061	0.11	400	U	H	-0.044	0.059	0.10	U	-		
Technetium 99	0.043	0.21	0.60	15	U	TC	-0.237	0.31	0.66	U	-		
Plutonium 238	0	0.032	0.066	1.0	U	PU	0.007	0.013	0.025	U	-		
Plutonium 239/240	-0.005	0.032	0.077	1.0	U	PU	0.023	0.020	0.032	U	-		
Nickel 63	0.514	1.2	2.0	30	U	NI_L	0	1.2	2.0	U	-		
Americium 241	-0.025	0.049	0.11	1.0	U	AM	0	0.032	0.061	U	-		
Total Strontium	0.132	0.26	0.33	1.0	U	SR	0.212	0.27	0.36	U	-		
Thorium 228	0.341	0.24	0.31	1.0	J	TH	0.566	0.26	0.30	J	50	118	
Thorium 230	0.442	0.24	0.19	1.0	J	TH	0.347	0.22	0.20	J	24	124	
Thorium 232	0.381	0.20	0.15	1.0	J	TH	0.456	0.18	0.14	J	18	97	
Potassium 40	14.8	0.59	0.26			GAM	15.3	0.63	0.24		3	33	
Cobalt 60	U		0.027	0.050	U	GAM	U		0.026	U	-		
Cesium 137	U		0.025	0.10	U	GAM	U		0.024	U	-		
Europium 152	U		0.059	0.10	U	GAM	U		0.061	U	-		
Europium 154	U		0.092	0.10	U	GAM	U		0.092	U	-		
Europium 155	U		0.12	0.10	U	GAM	U		0.089	U	-		
Radium 226	0.492	0.051	0.047	0.10		GAM	0.459	0.051	0.049		7	39	
Radium 228	0.562	0.095	0.098	0.20		GAM	0.588	0.12	0.12		5	51	
Thorium 228	0.546	0.033	0.034			GAM	0.548	0.035	0.035		0	34	
Thorium 232	0.562	0.095	0.098			GAM	0.588	0.12	0.12		5	51	
Americium 241	U		0.22		U	GAM	U		0.21	U	-		
Uranium 238	U		3.3		U	GAM	U		3.4	U	-		
Uranium 235	U		0.11		U	GAM	U		0.11	U	-		

200 Area Source Chara. - 200-CW-1 OU

QC-DUP#4 32825

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 01/24/00

MATRIX SPIKE

SDG 7267		Client/Case no Hanford	SDG H0604
Contact Melissa C. Mannion		Case no TRB-SBB-207925	
MATRIX SPIKE	ORIGINAL		
Lab sample id N911026-16	Lab sample id N911026-10	Client sample id B0WN06	
Dept sample id 7267-016	Dept sample id 7267-010	Location/Matrix 200 B Pond	SOLID
	Received 11/02/99	Collected 10/28/99 09:03	
	% solids 95.9	Custody/SAF No B99-078-148	B99-078

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	45.5	0.46	0.11	400	J	H	48.8	2.0	0.023	0.064	93	85-115	

200 Area Source Chara. - 200-CW-1 OU

QC-MS#10 32826

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-MS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-21

B0WN06

MATRIX SPIKE

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Case no	TRB-SBB-207925
MATRIX SPIKE		ORIGINAL	
Lab sample id	N911026-21	Lab sample id	N911026-10
Dept sample id	7267-021	Dept sample id	7267-010
		Received	11/02/99
		% solids	95.9
Client sample id	B0WN06		
Location/Matrix	200 B Pond SOLID		
Collected	10/28/99 09:03		
Custody/SAF No	B99-078-148 B99-078		

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Nickel 63	119	3.4	2.1	30		NI_L	134	5.4	-0.342	1.2	89	85-115	

200 Area Source Chara. - 200-CW-1 OU

QC-MS#10 32828

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-MS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-01 B0WMJ1

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-01	Client sample id	B0WMJ1
Dept sample id	7267-001	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 12:27
% solids	93.9	Custody/SAF No	B99-078-144 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.529	0.068	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.015	0.015	0.025	1.0	U	PU
Plutonium 239/240	PU-239/240	0.013	0.015	0.028	1.0	U	PU
Americium 241	14596-10-2	0.013	0.050	0.12	1.0	U	AM
Total Strontium	SR-RAD	0.650	0.32	0.47	1.0	J	SR
Thorium 228	14274-82-9	0.585	0.19	0.20	1.0	J	TH
Thorium 230	14269-63-7	0.680	0.22	0.18	1.0	J	TH
Thorium 232	TH-232	0.435	0.16	0.10	1.0	J	TH
Potassium 40	13966-00-2	14.8	0.37	0.17			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	5.40	0.055	0.025	0.10		GAM
Europium 152	14683-23-9	U		0.060	0.10	U	GAM
Europium 154	15585-10-1	U		0.057	0.10	U	GAM
Europium 155	14391-16-3	U		0.073	0.10	U	GAM
Radium 226	13982-63-3	0.645	0.040	0.041	0.10		GAM
Radium 228	15262-20-1	0.871	0.077	0.074	0.20		GAM
Thorium 228	14274-82-9	0.814	0.028	0.032			GAM
Thorium 232	TH-232	0.871	0.077	0.074			GAM
Americium 241	14596-10-2	U		0.19		U	GAM
Uranium 238	U-238	U		2.1		U	GAM
Uranium 235	15117-96-1	U		0.091		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-02 B0WMJ2

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-02	Client sample id	B0WMJ2
Dept sample id	7267-002	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 12:19
% solids	84.5	Custody/SAF No	B99-078-144 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.700	0.090	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	-0.003	0.011	0.029	1.0	U	PU
Plutonium 239/240	PU-239/240	0.032	0.021	0.029	1.0	J	PU
Americium 241	14596-10-2	0.005	0.018	0.035	1.0	U	AM
Total Strontium	SR-RAD	0.031	0.25	0.35	1.0	U	SR
Thorium 228	14274-82-9	0.341	0.20	0.29	1.0	J	TH
Thorium 230	14269-63-7	0.488	0.23	0.23	1.0	J	TH
Thorium 232	TH-232	0.439	0.16	0.12	1.0	J	TH
Potassium 40	13966-00-2	16.7	0.80	0.24			GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	0.029	0.015	0.022	0.10	J	GAM
Europium 152	14683-23-9	U		0.066	0.10	U	GAM
Europium 154	15585-10-1	U		0.086	0.10	U	GAM
Europium 155	14391-16-3	U		0.084	0.10	U	GAM
Radium 226	13982-63-3	0.931	0.057	0.051	0.10		GAM
Radium 228	15262-20-1	1.11	0.11	0.11	0.20		GAM
Thorium 228	14274-82-9	1.06	0.037	0.030			GAM
Thorium 232	TH-232	1.11	0.11	0.11			GAM
Americium 241	14596-10-2	U		0.036		U	GAM
Uranium 238	U-238	U		2.9		U	GAM
Uranium 235	15117-96-1	U		0.15		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-03

B0WMJ3

DATA SHEET

SDG	7267	Client/Case no	Hanford	SDG H0604	
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925		
Lab sample id	N911026-03	Client sample id	B0WMJ3		
Dept sample id	7267-003	Location/Matrix	200 B Pond	SOLID	
Received	11/02/99	Collected	10/28/99 12:38		
% solids	96.5	Custody/SAF No	B99-078-144	B99-078	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.318	0.041	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.025	0.015	0.019	1.0	J	PU
Plutonium 239/240	PU-239/240	0	0.010	0.024	1.0	U	PU
Americium 241	14596-10-2	0.052	0.063	0.080	1.0	U	AM
Total Strontium	SR-RAD	0.013	0.31	0.41	1.0	U	SR
Thorium 228	14274-82-9	0.286	0.24	0.36	1.0	U	TH
Thorium 230	14269-63-7	0.358	0.24	0.26	1.0	J	TH
Thorium 232	TH-232	0.548	0.24	0.18	1.0	J	TH
Potassium 40	13966-00-2	12.7	0.44	0.17			GAM
Cobalt 60	10198-40-0	U		0.019	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.10	U	GAM
Europium 152	14683-23-9	U		0.042	0.10	U	GAM
Europium 154	15585-10-1	U		0.064	0.10	U	GAM
Europium 155	14391-16-3	U		0.046	0.10	U	GAM
Radium 226	13982-63-3	0.345	0.035	0.033	0.10		GAM
Radium 228	15262-20-1	0.528	0.075	0.069	0.20		GAM
Thorium 228	14274-82-9	0.484	0.024	0.023			GAM
Thorium 232	TH-232	0.528	0.075	0.069			GAM
Americium 241	14596-10-2	U		0.056		U	GAM
Uranium 238	U-238	U		2.3		U	GAM
Uranium 235	15117-96-1	U		0.072		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-04 B0WMJ6

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-04	Client sample id	B0WMJ6
Dept sample id	7267-004	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 12:45
% solids	96.5	Custody/SAF No	B99-078-145 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.044	0.059	0.10	400	U	H
Technetium 99	14133-76-7	-0.237	0.31	0.66	15	U	TC
Total Uranium (ug/g)	7440-61-1	0.492	0.063	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.007	0.013	0.025	1.0	U	PU
Plutonium 239/240	PU-239/240	0.023	0.020	0.032	1.0	U	PU
Nickel 63	13981-37-8	0	1.2	2.0	30	U	NI_L
Americium 241	14596-10-2	0	0.032	0.061	1.0	U	AM
Total Strontium	SR-RAD	0.212	0.27	0.36	1.0	U	SR
Thorium 228	14274-82-9	0.566	0.26	0.30	1.0	J	TH
Thorium 230	14269-63-7	0.347	0.22	0.20	1.0	J	TH
Thorium 232	TH-232	0.456	0.18	0.14	1.0	J	TH
Potassium 40	13966-00-2	15.3	0.63	0.24			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.024	0.10	U	GAM
Europium 152	14683-23-9	U		0.061	0.10	U	GAM
Europium 154	15585-10-1	U		0.092	0.10	U	GAM
Europium 155	14391-16-3	U		0.089	0.10	U	GAM
Radium 226	13982-63-3	0.459	0.051	0.049	0.10		GAM
Radium 228	15262-20-1	0.588	0.12	0.12	0.20		GAM
Thorium 228	14274-82-9	0.548	0.035	0.035			GAM
Thorium 232	TH-232	0.588	0.12	0.12			GAM
Americium 241	14596-10-2	U		0.21		U	GAM
Uranium 238	U-238	U		3.4		U	GAM
Uranium 235	15117-96-1	U		0.11		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-05 B0WN01

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-05	Client sample id	B0WN01
Dept sample id	7267-005	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 08:13
% solids	86.3	Custody/SAF No	B99-078-146 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.820	0.10	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.047	0.031	0.034	1.0	J	PU
Plutonium 239/240	PU-239/240	1.42	0.16	0.034	1.0		PU
Americium 241	14596-10-2	0.161	0.082	0.077	1.0	J	AM
Total Strontium	SR-RAD	0.070	0.27	0.37	1.0	U	SR
Thorium 228	14274-82-9	0.607	0.21	0.21	1.0	J	TH
Thorium 230	14269-63-7	0.478	0.18	0.16	1.0	J	TH
Thorium 232	TH-232	0.336	0.13	0.099	1.0	J	TH
Potassium 40	13966-00-2	13.3	0.55	0.29			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	9.80	0.11	0.046	0.10		GAM
Europium 152	14683-23-9	U		0.12	0.10	U	GAM
Europium 154	15585-10-1	U		0.083	0.10	U	GAM
Europium 155	14391-16-3	U		0.092	0.10	U	GAM
Radium 226	13982-63-3	0.653	0.072	0.080	0.10		GAM
Radium 228	15262-20-1	0.710	0.13	0.14	0.20		GAM
Thorium 228	14274-82-9	0.759	0.042	0.052			GAM
Thorium 232	TH-232	0.710	0.13	0.14			GAM
Americium 241	14596-10-2	U		0.19		U	GAM
Uranium 238	U-238	U		3.1		U	GAM
Uranium 235	15117-96-1	U		0.15		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-06 B0WN02

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-06	Client sample id	B0WN02
Dept sample id	7267-006	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 08:20
% solids	87.7	Custody/SAF No	B99-078-146 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.714	0.091	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.050	0.021	0.020	1.0	J	PU
Plutonium 239/240	PU-239/240	1.56	0.15	0.029	1.0		PU
Americium 241	14596-10-2	0.023	0.046	0.077	1.0	U	AM
Total Strontium	SR-RAD	-0.017	0.25	0.35	1.0	U	SR
Thorium 228	14274-82-9	0.849	0.38	0.45	1.0	J	TH
Thorium 230	14269-63-7	0.691	0.32	0.30	1.0	J	TH
Thorium 232	TH-232	0.754	0.32	0.24	1.0	J	TH
Potassium 40	13966-00-2	13.2	0.57	0.27			GAM
Cobalt 60	10198-40-0	U		0.029	0.050	U	GAM
Cesium 137	10045-97-3	7.10	0.090	0.038	0.10		GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		0.099	0.10	U	GAM
Europium 155	14391-16-3	U		0.090	0.10	U	GAM
Radium 226	13982-63-3	0.660	0.061	0.058	0.10		GAM
Radium 228	15262-20-1	0.864	0.13	0.12	0.20		GAM
Thorium 228	14274-82-9	0.740	0.038	0.044			GAM
Thorium 232	TH-232	0.864	0.13	0.12			GAM
Americium 241	14596-10-2	0.222	0.038	0.050			GAM
Uranium 238	U-238	U		3.6		U	GAM
Uranium 235	15117-96-1	U		0.11		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-07

B0WN03

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-07	Client sample id	B0WN03
Dept sample id	7267-007	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 08:29
% solids	85.5	Custody/SAF No	B99-078-146 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.651	0.083	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.110	0.034	0.018	1.0	J	PU
Plutonium 239/240	PU-239/240	5.73	0.37	0.023	1.0		PU
Americium 241	14596-10-2	0.215	0.096	0.097	1.0	J	AM
Total Strontium	SR-RAD	0.056	0.26	0.36	1.0	U	SR
Thorium 228	14274-82-9	0.987	0.33	0.33	1.0	J	TH
Thorium 230	14269-63-7	0.367	0.28	0.31	1.0	J	TH
Thorium 232	TH-232	0.711	0.28	0.22	1.0	J	TH
Potassium 40	13966-00-2	13.7	0.44	0.19			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	18.2	0.12	0.041	0.10		GAM
Europium 152	14683-23-9	U		0.11	0.10	U	GAM
Europium 154	15585-10-1	U		0.067	0.10	U	GAM
Europium 155	14391-16-3	U		0.12	0.10	U	GAM
Radium 226	13982-63-3	0.597	0.058	0.064	0.10		GAM
Radium 228	15262-20-1	0.744	0.091	0.087	0.20		GAM
Thorium 228	14274-82-9	0.734	0.044	0.057			GAM
Thorium 232	TH-232	0.744	0.091	0.087			GAM
Americium 241	14596-10-2	U		0.34		U	GAM
Uranium 238	U-238	U		2.5		U	GAM
Uranium 235	15117-96-1	U		0.15		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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Version	3.06
Report date	01/24/00

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SAMPLE DELIVERY GROUP H0604

N911026-08

B0WN04

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-08	Client sample id	B0WN04
Dept sample id	7267-008	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 08:45
% solids	94.2	Custody/SAF No	B99-078-146 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.974	0.12	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.042	0.021	0.020	1.0	J	PU
Plutonium 239/240	PU-239/240	1.05	0.12	0.020	1.0		PU
Americium 241	14596-10-2	0.154	0.068	0.064	1.0	J	AM
Total Strontium	SR-RAD	0.148	0.29	0.36	1.0	U	SR
Thorium 228	14274-82-9	0.655	0.47	0.59	1.0	J	TH
Thorium 230	14269-63-7	1.04	0.47	0.37	1.0		TH
Thorium 232	TH-232	0.462	0.31	0.29	1.0	J	TH
Potassium 40	13966-00-2	11.2	0.56	0.12			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	0.572	0.020	0.016	0.10		GAM
Europium 152	14683-23-9	U		0.035	0.10	U	GAM
Europium 154	15585-10-1	U		0.045	0.10	U	GAM
Europium 155	14391-16-3	U		0.032	0.10	U	GAM
Radium 226	13982-63-3	0.406	0.030	0.027	0.10		GAM
Radium 228	15262-20-1	0.575	0.062	0.054	0.20		GAM
Thorium 228	14274-82-9	0.540	0.020	0.016			GAM
Thorium 232	TH-232	0.575	0.062	0.054			GAM
Americium 241	14596-10-2	0.058	0.016	0.022			GAM
Uranium 238	U-238	U		1.5		U	GAM
Uranium 235	15117-96-1	U		0.072		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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Version	3.06
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SAMPLE DELIVERY GROUP H0604

N911026-09 B0WN05

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-09	Client sample id	B0WN05
Dept sample id	7267-009	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 08:57
% solids	95.9	Custody/SAF No	B99-078-146 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Uranium (ug/g)	7440-61-1	0.505	0.065	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	-0.005	0.014	0.037	1.0	U	PU
Plutonium 239/240	PU-239/240	0.048	0.029	0.042	1.0	J	PU
Americium 241	14596-10-2	0.058	0.036	0.034	1.0	J	AM
Total Strontium	SR-RAD	0.584	0.21	0.26	1.0	J	SR
Thorium 228	14274-82-9	0.377	0.16	0.17	1.0	J	TH
Thorium 230	14269-63-7	0.593	0.22	0.18	1.0	J	TH
Thorium 232	TH-232	0.310	0.14	0.10	1.0	J	TH
Potassium 40	13966-00-2	11.6	0.51	0.22			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	U		0.022	0.10	U	GAM
Europium 152	14683-23-9	U		0.048	0.10	U	GAM
Europium 154	15585-10-1	U		0.080	0.10	U	GAM
Europium 155	14391-16-3	U		0.042	0.10	U	GAM
Radium 226	13982-63-3	0.407	0.045	0.043	0.10		GAM
Radium 228	15262-20-1	0.550	0.10	0.10	0.20		GAM
Thorium 228	14274-82-9	0.617	0.036	0.034			GAM
Thorium 232	TH-232	0.550	0.10	0.10			GAM
Americium 241	14596-10-2	U		0.079		U	GAM
Uranium 238	U-238	U		3.0		U	GAM
Uranium 235	15117-96-1	U		0.065		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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Report date	01/24/00

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SAMPLE DELIVERY GROUP H0604

N911026-10

B0WN06

DATA SHEET

SDG	7267	Client/Case no	Hanford	SDG H0604	
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925		
Lab sample id	N911026-10	Client sample id	B0WN06		
Dept sample id	7267-010	Location/Matrix	200 B Pond	SOLID	
Received	11/02/99	Collected	10/28/99 09:03		
% solids	95.9	Custody/SAF No	B99-078-148	B99-078	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.023	0.064	0.11	400	U	H
Technetium 99	14133-76-7	0.017	0.16	0.37	15	U	TC
Total Uranium (ug/g)	7440-61-1	0.454	0.058	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.003	0.019	0.034	1.0	U	PU
Plutonium 239/240	PU-239/240	0.074	0.031	0.024	1.0	J	PU
Nickel 63	13981-37-8	-0.342	1.2	2.0	30	U	NI_L
Americium 241	14596-10-2	0.032	0.032	0.041	1.0	U	AM
Total Strontium	SR-RAD	0.382	0.17	0.25	1.0	J	SR
Thorium 228	14274-82-9	0.581	0.26	0.32	1.0	J	TH
Thorium 230	14269-63-7	0.508	0.22	0.14	1.0	J	TH
Thorium 232	TH-232	0.200	0.15	0.14	1.0	J	TH
Potassium 40	13966-00-2	10.8	0.43	0.20			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.034	0.017	0.021	0.10	J	GAM
Europium 152	14683-23-9	U		0.049	0.10	U	GAM
Europium 154	15585-10-1	U		0.068	0.10	U	GAM
Europium 155	14391-16-3	U		0.052	0.10	U	GAM
Radium 226	13982-63-3	0.405	0.037	0.037	0.10		GAM
Radium 228	15262-20-1	0.430	0.095	0.096	0.20		GAM
Thorium 228	14274-82-9	0.457	0.024	0.024			GAM
Thorium 232	TH-232	0.430	0.095	0.096			GAM
Americium 241	14596-10-2	U		0.075		U	GAM
Uranium 238	U-238	U		2.5		U	GAM
Uranium 235	15117-96-1	U		0.081		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
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Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-11 B0WN07

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-11	Client sample id	B0WN07
Dept sample id	7267-011	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 09:10
% solids	95.5	Custody/SAF No	B99-078-148 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.030	0.060	0.10	400	U	H
Technetium 99	14133-76-7	-0.015	0.22	0.64	15	U	TC
Total Uranium (ug/g)	7440-61-1	0.652	0.083	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.003	0.016	0.029	1.0	U	PU
Plutonium 239/240	PU-239/240	0.021	0.016	0.020	1.0	J	PU
Nickel 63	13981-37-8	-0.307	1.2	2.0	30	U	NI_L
Americium 241	14596-10-2	0.016	0.032	0.060	1.0	U	AM
Total Strontium	SR-RAD	0.234	0.18	0.28	1.0	U	SR
Thorium 228	14274-82-9	0.488	0.19	0.23	1.0	J	TH
Thorium 230	14269-63-7	0.321	0.17	0.17	1.0	J	TH
Thorium 232	TH-232	0.226	0.12	0.091	1.0	J	TH
Potassium 40	13966-00-2	12.2	0.39	0.17			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.10	U	GAM
Europium 152	14683-23-9	U		0.041	0.10	U	GAM
Europium 154	15585-10-1	U		0.060	0.10	U	GAM
Europium 155	14391-16-3	U		0.057	0.10	U	GAM
Radium 226	13982-63-3	0.380	0.034	0.033	0.10		GAM
Radium 228	15262-20-1	0.635	0.077	0.065	0.20		GAM
Thorium 228	14274-82-9	0.481	0.023	0.023			GAM
Thorium 232	TH-232	0.635	0.077	0.065			GAM
Americium 241	14596-10-2	U		0.14		U	GAM
Uranium 238	U-238	U		2.0		U	GAM
Uranium 235	15117-96-1	U		0.072		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

N911026-12 B0WN08

DATA SHEET

SDG	7267	Client/Case no	Hanford SDG H0604
Contact	Melissa C. Mannion	Contract	TRB-SBB-207925
Lab sample id	N911026-12	Client sample id	B0WN08
Dept sample id	7267-012	Location/Matrix	200 B Pond SOLID
Received	11/02/99	Collected	10/28/99 09:18
% solids	94.9	Custody/SAF No	B99-078-148 B99-078

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.030	0.060	0.10	400	U	H
Technetium 99	14133-76-7	-0.033	0.18	0.53	15	U	TC
Total Uranium (ug/g)	7440-61-1	0.374	0.048	0.004	1.0	J	U_T
Plutonium 238	13981-16-3	0.018	0.031	0.051	1.0	U	PU
Plutonium 239/240	PU-239/240	0.046	0.031	0.042	1.0	J	PU
Nickel 63	13981-37-8	-0.823	1.2	2.0	30	U	NI_L
Americium 241	14596-10-2	0.015	0.045	0.072	1.0	U	AM
Total Strontium	SR-RAD	0.416	0.19	0.27	1.0	J	SR
Thorium 228	14274-82-9	0.437	0.20	0.15	1.0	J	TH
Thorium 230	14269-63-7	0.340	0.19	0.23	1.0	J	TH
Thorium 232	TH-232	0.307	0.16	0.12	1.0	J	TH
Potassium 40	13966-00-2	13.0	0.59	0.14			GAM
Cobalt 60	10198-40-0	U		0.014	0.050	U	GAM
Cesium 137	10045-97-3	U		0.013	0.10	U	GAM
Europium 152	14683-23-9	U		0.035	0.10	U	GAM
Europium 154	15585-10-1	U		0.045	0.10	U	GAM
Europium 155	14391-16-3	U		0.054	0.10	U	GAM
Radium 226	13982-63-3	0.406	0.030	0.027	0.10		GAM
Radium 228	15262-20-1	0.534	0.063	0.058	0.20		GAM
Thorium 228	14274-82-9	0.526	0.020	0.016			GAM
Thorium 232	TH-232	0.534	0.063	0.058			GAM
Americium 241	14596-10-2	U		0.018		U	GAM
Uranium 238	U-238	U		1.6		U	GAM
Uranium 235	15117-96-1	U		0.046		U	GAM

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	01/24/00

Test AM Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

METHOD SUMMARY

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Americium 241
Preparation batch 6909-012					
B0WMJ1	N911026-01			7267-001	U
B0WMJ2	N911026-02		A0R1	7267-002	U
B0WMJ3	N911026-03			7267-003	U
B0WMJ6	N911026-04			7267-004	U
B0WN01	N911026-05			7267-005	0.161 J
B0WN02	N911026-06		A0R1	7267-006	U
B0WN03	N911026-07		A0R1	7267-007	0.215 J
B0WN04	N911026-08			7267-008	0.154 J
B0WN05	N911026-09			7267-009	0.058 J
B0WN06	N911026-10			7267-010	U
B0WN07	N911026-11			7267-011	U
B0WN08	N911026-12			7267-012	U
BLK (QC ID=32824)	N911026-14			7267-014	U
LCS (QC ID=32823)	N911026-13			7267-013	ok
Duplicate (N911026-04)	N911026-15			7267-015	- U

Nominal values and limits from method RDLs (pCi/g) 1.0
200 Area Source Chara. - 200-CW-1 OU

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test AM	Matrix SOLID
SDG 7267	
Contact Melissa C. Mannion	

METHOD SUMMARY

AMERICIUM 241 IN SOIL

ALPHA SPECTROSCOPY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG H0604	

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 6909-012	2σ prep error 5.0 %			Reference Lab Notebook 6909 pg. 12												
B0WMJ1	N911026-01			0.12	0.500			26		720			82	01/07/00	01/18	SS-010
B0WMJ2	N911026-02		A0R1	0.035	0.500			55		966			85	01/07/00	01/21	SS-006
B0WMJ3	N911026-03			0.080	0.500			30		724			78	01/13/00	01/14	SS-003
B0WMJ6	N911026-04			0.061	0.500			42		722			78	01/07/00	01/14	SS-005
B0WN01	N911026-05			0.077	0.500			33		722			78	01/07/00	01/14	SS-006
B0WN02	N911026-06		A0R1	0.077	0.500			41		967			85	01/07/00	01/21	SS-055
B0WN03	N911026-07		A0R1	0.097	0.500			36		967			85	01/07/00	01/21	SS-056
B0WN04	N911026-08			0.064	0.500			48		719			78	01/07/00	01/14	SS-010
B0WN05	N911026-09			0.034	0.500			78		719			78	01/07/00	01/14	SS-011
B0WN06	N911026-10			0.041	0.500			65		719			78	01/07/00	01/14	SS-012
B0WN07	N911026-11			0.060	0.500			43		719			78	01/07/00	01/14	SS-013
B0WN08	N911026-12			0.072	0.500			47		719			78	01/07/00	01/14	SS-015
BLK (QC ID=32824)	N911026-14			0.096	0.500			39		751				01/14/00	01/15	SS-055
LCS (QC ID=32823)	N911026-13			0.035	0.500			96		719				01/14/00	01/14	SS-016
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.11	0.500			38		751			79	01/07/00	01/15	SS-056
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	MDA	0.071	± 0.055
FOR 15 SAMPLES	YIELD	48	± 38

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Test PU Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Plutonium 238	Plutonium 239/240
Preparation batch 6909-012						
B0WMJ1	N911026-01			7267-001	U	U
B0WMJ2	N911026-02			7267-002	U	0.032 J
B0WMJ3	N911026-03			7267-003	0.025 J	U
B0WMJ6	N911026-04			7267-004	U	U
B0WN01	N911026-05			7267-005	0.047 J	1.42
B0WN02	N911026-06			7267-006	0.050 J	1.56
B0WN03	N911026-07			7267-007	0.110 J	5.73
B0WN04	N911026-08			7267-008	0.042 J	1.05
B0WN05	N911026-09			7267-009	U	0.048 J
B0WN06	N911026-10			7267-010	U	0.074 J
B0WN07	N911026-11			7267-011	U	0.021 J
B0WN08	N911026-12			7267-012	U	0.046 J
BLK (QC ID=32824)	N911026-14			7267-014	U	U
LCS (QC ID=32823)	N911026-13			7267-013	ok	ok
Duplicate (N911026-04)	N911026-15			7267-015	- U	- U
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0
200 Area Source Chara. - 200-CW-1 OU						

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test PU Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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 6909-012	2σ prep error 5.0 %			Reference Lab Notebook 6909 pg. 12												
B0WMJ1	N911026-01			0.028	0.500			85		1118			76	01/07/00	01/12	SS-001
B0WMJ2	N911026-02			0.029	0.500			82		1115			76	01/07/00	01/12	SS-005
B0WMJ3	N911026-03			0.024	0.500			85		1115			76	01/07/00	01/12	SS-006
B0WMJ6	N911026-04			0.032	0.500			67		1112			76	01/07/00	01/12	SS-009
B0WN01	N911026-05			0.034	0.500			67		1112			76	01/07/00	01/12	SS-010
B0WN02	N911026-06			0.029	0.500			85		1112			76	01/07/00	01/12	SS-011
B0WN03	N911026-07			0.023	0.500			94		1112			76	01/07/00	01/12	SS-012
B0WN04	N911026-08			0.020	0.500			85		1112			76	01/07/00	01/12	SS-013
B0WN05	N911026-09			0.042	0.500			91		1112			76	01/07/00	01/12	SS-014
B0WN06	N911026-10			0.034	0.500			74		1112			76	01/07/00	01/12	SS-015
B0WN07	N911026-11			0.029	0.500			85		1112			76	01/07/00	01/12	SS-016
B0WN08	N911026-12			0.051	0.500			87		1075			76	01/07/00	01/12	SS-035
BLK (QC ID=32824)	N911026-14			0.071	0.500			72		1073				01/07/00	01/12	SS-039
LCS (QC ID=32823)	N911026-13			0.050	0.500			78		1075				01/06/00	01/12	SS-032
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.077	0.500			63		719			78	01/07/00	01/14	SS-014
Nominal values and limits from method				1.0	0.500			20-105		10	100		180			

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 FOR 15 SAMPLES
MDA 0.038 ± 0.034
YIELD 80 ± 19

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

Test TH Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Thorium 228	Thorium 230	Thorium 232
Preparation batch 6909-012							
B0WMJ1	N911026-01			7267-001	0.585 J	0.680 J	0.435 J
B0WMJ2	N911026-02			7267-002	0.341 J	0.488 J	0.439 J
B0WMJ3	N911026-03			7267-003	U	0.358 J	0.548 J
B0WMJ6	N911026-04			7267-004	0.566 J	0.347 J	0.456 J
B0WN01	N911026-05			7267-005	0.607 J	0.478 J	0.336 J
B0WN02	N911026-06			7267-006	0.849 J	0.691 J	0.754 J
B0WN03	N911026-07			7267-007	0.987 J	0.367 J	0.711 J
B0WN04	N911026-08			7267-008	0.655 J	1.04	0.462 J
B0WN05	N911026-09			7267-009	0.377 J	0.593 J	0.310 J
B0WN06	N911026-10			7267-010	0.581 J	0.508 J	0.200 J
B0WN07	N911026-11			7267-011	0.488 J	0.321 J	0.226 J
B0WN08	N911026-12			7267-012	0.437 J	0.340 J	0.307 J
BLK (QC ID=32824)	N911026-14			7267-014	U	U	U
LCS (QC ID=32823)	N911026-13			7267-013	No data U	ok	No data U
Duplicate (N911026-04)	N911026-15			7267-015	ok J	ok J	ok J
Nominal values and limits from method 200 Area Source Chara. - 200-CW-1 OU				RDLs (pCi/g)	1.0	1.0	1.0

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

Test TH Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL

ALPHA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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 6909-012	2σ prep error 5.0 %			Reference Lab Notebook 6909 pg. 12												
B0WMJ1	N911026-01			0.20	0.250			87		404			78	01/07/00	01/14	SS-027
B0WMJ2	N911026-02			0.29	0.250			70		404			78	01/07/00	01/14	SS-029
B0WMJ3	N911026-03			0.36	0.250			48		404			78	01/07/00	01/14	SS-031
B0WMJ6	N911026-04			0.30	0.250			62		404			78	01/07/00	01/14	SS-032
B0WN01	N911026-05			0.21	0.250			90		404			78	01/07/00	01/14	SS-033
B0WN02	N911026-06			0.45	0.250			36		404			78	01/07/00	01/14	SS-034
B0WN03	N911026-07			0.33	0.250			52		404			78	01/07/00	01/14	SS-035
B0WN04	N911026-08			0.59	0.250			31		404			78	01/07/00	01/14	SS-036
B0WN05	N911026-09			0.18	0.250			91		404			78	01/07/00	01/14	SS-038
B0WN06	N911026-10			0.32	0.250			63		403			78	01/07/00	01/14	SS-039
B0WN07	N911026-11			0.23	0.250			98		403			78	01/07/00	01/14	SS-040
B0WN08	N911026-12			0.23	0.250			70		402			78	01/07/00	01/14	SS-041
BLK (QC ID=32824)	N911026-14			0.24	0.250			68		400				01/07/00	01/14	SS-045
LCS (QC ID=32823)	N911026-13			0.26	0.250			55		400				01/07/00	01/14	SS-044
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.31	0.250			58		400			78	01/07/00	01/14	SS-048
Nominal values and limits from method				1.0	0.250			20-105		200			180			

PROCEDURES	REFERENCE	THPLATE
	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 FOR 15 SAMPLES				
MDA	0.30	±	0.21
YIELD	65	±	40

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test	SR
Matrix	SOLID
SDG	7267
Contact	Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium
Preparation batch 6909-012					
B0WMJ1	N911026-01			7267-001	0.650 J
B0WMJ2	N911026-02			7267-002	U
B0WMJ3	N911026-03			7267-003	U
B0WMJ6	N911026-04			7267-004	U
B0WN01	N911026-05			7267-005	U
B0WN02	N911026-06			7267-006	U
B0WN03	N911026-07			7267-007	U
B0WN04	N911026-08			7267-008	U
B0WN05	N911026-09			7267-009	0.584 J
B0WN06	N911026-10			7267-010	0.382 J
B0WN07	N911026-11			7267-011	U
B0WN08	N911026-12			7267-012	0.416 J
BLK (QC ID=32824)	N911026-14			7267-014	U
LCS (QC ID=32823)	N911026-13			7267-013	ok
Duplicate (N911026-04)	N911026-15			7267-015	- U

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

200 Area Source Chara. - 200-CW-1 OU

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test SR Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

METHOD SUMMARY

TOTAL STRONTIUM IN SOIL

BETA COUNTING

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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 6909-012	2σ prep error 10.0 %			Reference Lab Notebook 6909 pg. 12												
B0WMJ1	N911026-01			0.47	0.500			81		200			75	01/07/00	01/11	GRB-225
B0WMJ2	N911026-02			0.35	0.500			90		400			75	01/07/00	01/11	GRB-230
B0WMJ3	N911026-03			0.41	0.500			82		400			75	01/07/00	01/11	GRB-231
B0WMJ6	N911026-04			0.36	0.500			91		400			75	01/07/00	01/11	GRB-232
B0WN01	N911026-05			0.37	0.500			88		400			75	01/07/00	01/11	GRB-219
B0WN02	N911026-06			0.35	0.500			88		400			75	01/07/00	01/11	GRB-220
B0WN03	N911026-07			0.36	0.500			87		400			75	01/07/00	01/11	GRB-222
B0WN04	N911026-08			0.36	0.500			89		400			75	01/07/00	01/11	GRB-225
B0WN05	N911026-09			0.26	0.500			93		400			75	01/07/00	01/11	GRB-222
B0WN06	N911026-10			0.25	0.500			91		200			75	01/07/00	01/11	GRB-217
B0WN07	N911026-11			0.28	0.500			86		200			75	01/07/00	01/11	GRB-203
B0WN08	N911026-12			0.27	0.500			85		200			75	01/07/00	01/11	GRB-218
BLK (QC ID=32824)	N911026-14			0.35	0.500			75		400				01/12/00	01/12	GRB-204
LCS (QC ID=32823)	N911026-13			0.32	0.500			77		400				01/12/00	01/12	GRB-203
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.33	0.500			85		400			75	01/07/00	01/11	GRB-208
Nominal values and limits from method				1.0	0.500					100			180			

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

AVERAGES ± 2 SD FOR 15 SAMPLES
MDA 0.34 ± 0.12
YIELD 86 ± 10

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test	TC Matrix SOLID
SDG	7267
Contact	Melissa C. Mannion

METHOD SUMMARY

TECHNETIUM 99 IN SOIL

BETA COUNTING

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Technetium 99	
Preparation batch 6904-172						
B0WMJ6	N911026-04			7267-004	U	
B0WN06	N911026-10			7267-010	U	
B0WN07	N911026-11			7267-011	U	
B0WN08	N911026-12			7267-012	U	
BLK (QC ID=32742)	N910196-10			7257-010	U	
LCS (QC ID=32741)	N910196-09			7257-009	ok	
Duplicate (N911026-04)	N911026-15			7267-015	-	U

Nominal values and limits from method RDLs (pCi/g) 15

200 Area Source Chara. - 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 6904-172	2σ prep error 10.0 %				Reference Lab Notebook 6904 pg. 172											
B0WMJ6	N911026-04			0.66	1.01			52		101			61	12/21/99	12/28	GRB-217
B0WN06	N911026-10			0.37	1.02			64		200			63	12/21/99	12/30	GRB-219
B0WN07	N911026-11			0.64	1.04			51		101			62	12/21/99	12/29	GRB-218
B0WN08	N911026-12			0.53	1.02			63		101			61	12/21/99	12/28	GRB-220
BLK (QC ID=32742)	N910196-10			0.72	1.02			47		101				12/20/99	12/28	GRB-232
LCS (QC ID=32741)	N910196-09			0.56	1.02			59		101				12/20/99	12/27	GRB-222
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.60	1.01			55		101			62	12/21/99	12/29	GRB-220
Nominal values and limits from method				15	1.02			20-105		50			180			

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	0.58	±	0.23
FOR 7 SAMPLES	YIELD	56	±	13

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test	GAM
Matrix	SOLID
SDG	7267
Contact	Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client	Hanford
Contract	TRB-SBB-207925
Case no	SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Cobalt 60	Cesium 137
Preparation batch 6909-012						
B0WMJ1	N911026-01			7267-001	U	5.40
B0WMJ2	N911026-02			7267-002	U	0.029 J
B0WMJ3	N911026-03			7267-003	U	U
B0WMJ6	N911026-04			7267-004	U	U
B0WN01	N911026-05			7267-005	U	9.80
B0WN02	N911026-06			7267-006	U	7.10
B0WN03	N911026-07			7267-007	U	18.2
B0WN04	N911026-08			7267-008	U	0.572
B0WN05	N911026-09			7267-009	U	U
B0WN06	N911026-10			7267-010	U	0.034 J
B0WN07	N911026-11			7267-011	U	U
B0WN08	N911026-12			7267-012	U	U
BLK (QC ID=32824)	N911026-14			7267-014	U	U
LCS (QC ID=32823)	N911026-13			7267-013	ok	ok
Duplicate (N911026-04)	N911026-15			7267-015	- U	- U
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
200 Area Source Chara. - 200-CW-1 OU						

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test GAM Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

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 6909-012	2σ prep error 15.0 %	Reference Lab Notebook 6909 pg. 12														
B0WMJ1	N911026-01			0.047	664					688			50	12/06/99	12/17	MB,05,00
B0WMJ2	N911026-02			0.068	677					207			53	12/06/99	12/20	MB,07,00
B0WMJ3	N911026-03			0.051	733					207			53	12/06/99	12/20	02,04,00
B0WMJ6	N911026-04			0.077	769					207			53	12/06/99	12/20	MB,05,00
B0WN01	N911026-05			0.076	627					456			54	12/06/99	12/21	02,03,00
B0WN02	N911026-06			0.084	663					456			54	12/06/99	12/21	02,01,00
B0WN03	N911026-07			0.057	674					456			54	12/06/99	12/21	MB,05,00
B0WN04	N911026-08			0.036	775					456			54	12/06/99	12/21	MB,07,00
B0WN05	N911026-09			0.072	729					459			55	12/06/99	12/22	02,01,00
B0WN06	N911026-10			0.058	776					459			55	12/06/99	12/22	02,03,00
B0WN07	N911026-11			0.047	753					458			55	12/06/99	12/22	MB,05,00
B0WN08	N911026-12			0.038	756					458			55	12/06/99	12/22	MB,07,00
BLK (QC ID=32824)	N911026-14			0.12	171					240				12/06/99	12/27	MB,07,00
LCS (QC ID=32823)	N911026-13			0.031	171					458				12/06/99	12/22	01,04,00
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.073	769					225			60	12/06/99	12/27	MB,05,00
Nominal values and limits from method				0.050	171					100			180			

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

AVERAGES ± 2 SD FOR 15 SAMPLES
MDA 0.062 ± 0.046
YIELD ____ ± ____

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test U T Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, TOTAL IN SOIL
KINETIC PHOSPHORIMETRY

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Uranium
Preparation batch 6909-012					
B0WMJ1	N911026-01			7267-001	0.529 J
B0WMJ2	N911026-02			7267-002	0.700 J
B0WMJ3	N911026-03			7267-003	0.318 J
B0WMJ6	N911026-04			7267-004	0.492 J
B0WN01	N911026-05			7267-005	0.820 J
B0WN02	N911026-06			7267-006	0.714 J
B0WN03	N911026-07			7267-007	0.651 J
B0WN04	N911026-08			7267-008	0.974 J
B0WN05	N911026-09			7267-009	0.505 J
B0WN06	N911026-10			7267-010	0.454 J
B0WN07	N911026-11			7267-011	0.652 J
B0WN08	N911026-12			7267-012	0.374 J
BLK (QC ID=32393)	N911026-18			7267-018	U
LCS (QC ID=32392)	N911026-17			7267-017	ok
Duplicate (N911026-01)	N911026-19			7267-019	ok J

Nominal values and limits from method RDLs (ug/g) 1.0
200 Area Source Chara. - 200-CW-1 OU

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test U T	Matrix SOLID
SDG 7267	
Contact Melissa C. Mannion	

METHOD SUMMARY

URANIUM, TOTAL IN SOIL

KINETIC PHOSPHORIMETRY

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG H0604	

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 6909-012	2σ prep error 9.0 %			Reference Lab Notebook 6909 pg. 12												
B0WMJ1	N911026-01			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WMJ2	N911026-02			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WMJ3	N911026-03			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WMJ6	N911026-04			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN01	N911026-05			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN02	N911026-06			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN03	N911026-07			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN04	N911026-08			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN05	N911026-09			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN06	N911026-10			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN07	N911026-11			0.004	0.0500								21	11/16/99	11/18	KPA-001
B0WN08	N911026-12			0.004	0.0500								21	11/16/99	11/18	KPA-001
BLK (QC ID=32393)	N911026-18			0.004	0.0500									12/16/99	12/18	KPA-001
LCS (QC ID=32392)	N911026-17			0.039	0.0500									12/16/99	12/18	KPA-001
Duplicate (N911026-01) (QC ID=32394)	N911026-19			0.004	0.0500								21	11/16/99	11/18	KPA-001
Nominal values and limits from method				1.0	0.0500								180			

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 FOR 15 SAMPLES	MDA 0.006	± 0.018
	YIELD	±

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test H	Matrix SOLID
SDG 7267	
Contact Melissa C. Mannion	

METHOD SUMMARY

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG H0604	

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Tritium	
Preparation batch 6909-012						
B0WMJ6	N911026-04			7267-004	U	
B0WN06	N911026-10			7267-010	U	
B0WN07	N911026-11			7267-011	U	
B0WN08	N911026-12			7267-012	U	
BLK (QC ID=32824)	N911026-14			7267-014	U	
LCS (QC ID=32823)	N911026-13			7267-013	ok	J
Duplicate (N911026-04)	N911026-15			7267-015	-	U
Spike (N911026-10)	N911026-16			7267-016	ok	J

Nominal values and limits from method RDLs (pCi/g) 400

200 Area Source Chara. - 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 6909-012	2σ prep error 10.0 %				Reference Lab Notebook 6909 pg. 12											
B0WMJ6	N911026-04			0.10	20.6			100		120			73	01/06/00	01/09	LSC-005
B0WN06	N911026-10			0.11	20.3			100		120			73	01/06/00	01/09	LSC-005
B0WN07	N911026-11			0.10	20.2			100		120			73	01/06/00	01/09	LSC-005
B0WN08	N911026-12			0.10	20.6			100		120			73	01/06/00	01/09	LSC-005
BLK (QC ID=32824)	N911026-14			0.20	20.5			50		120				01/07/00	01/09	LSC-005
LCS (QC ID=32823)	N911026-13			0.20	20.5			50		120				01/07/00	01/09	LSC-005
Duplicate (N911026-04) (QC ID=32825)	N911026-15			0.11	20.4			100		120			73	01/06/00	01/09	LSC-005
Spike (N911026-10) (QC ID=32826)	N911026-16			0.11	20.3			100		113			73	01/06/00	01/09	LSC-005
Nominal values and limits from method				400	20.5					25			180			

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test H	Matrix SOLID
SDG 7267	
Contact Melissa C. Mannion	

METHOD SUMMARY, cont.

TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract TRB-SBB-207925	
Case no SDG H0604	

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	0.13	±	0.088
FOR 8 SAMPLES	YIELD	88	±	46

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

Test NI_L Matrix SOLID
SDG 7267
Contact Melissa C. Mannion

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

METHOD SUMMARY

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract TRB-SBB-207925
Case no SDG H0604

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Nickel 63	
Preparation batch 6909-012						
B0WMJ6	N911026-04			7267-004	U	
B0WN06	N911026-10			7267-010	U	
B0WN07	N911026-11			7267-011	U	
B0WN08	N911026-12			7267-012	U	
BLK (QC ID=32824)	N911026-14			7267-014	U	
LCS (QC ID=32823)	N911026-13			7267-013	ok	
Duplicate (N911026-04)	N911026-15			7267-015	-	U
Spike (N911026-10)	N911026-21			7267-021	ok	
Nominal values and limits from method				RDLs (pCi/g)	30	
200 Area Source Chara. - 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 6909-012	2σ prep error 10.0 %				Reference Lab Notebook 6909 pg. 12											
B0WMJ6	N911026-04			2.0	0.500			100		100			80	01/14/00	01/16	LSC-005
B0WN06	N911026-10			2.0	0.500			100		100			80	01/14/00	01/16	LSC-005
B0WN07	N911026-11			2.0	0.500			100		100			80	01/14/00	01/16	LSC-005
B0WN08	N911026-12			2.0	0.500			100		100			80	01/14/00	01/16	LSC-005
BLK (QC ID=32824)	N911026-14			2.0	0.500			100		100				01/14/00	01/16	LSC-005
LCS (QC ID=32823)	N911026-13			2.0	0.500			100		100				01/14/00	01/16	LSC-005
Duplicate (N911026-04) (QC ID=32825)	N911026-15			2.0	0.500			100		100			80	01/14/00	01/16	LSC-005
Spike (N911026-10) (QC ID=32828)	N911026-21			2.1	0.500			100		100			80	01/14/00	01/16	LSC-005
Nominal values and limits from method				30	0.500					10			180			

Lab id TMANC
Protocol Hanford
Version Ver 1.0
Form DVD-CMS
Version 3.06
Report date 01/24/00

TMA/RICHMOND

SAMPLE DELIVERY GROUP H0604

Test NI L Matrix SOLID	Client Hanford
SDG 7267	Contract TRB-SBB-207925
Contact Melissa C. Mannion	Case no SDG H0604

METHOD SUMMARY, cont.

NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

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

AVERAGES ± 2 SD	MDA	2.0	±	0.071
FOR 8 SAMPLES	YIELD	100	±	0

Lab id	TMANC
Protocol	Hanford
Version	Ver 1.0
Form	DVD-CMS
Version	3.06
Report date	01/24/00

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-144	Page 1 of 1

Collector Bowers/Trice	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 200 B pond		SAF No. B99-078		
Ice Chest No. ERC-96-039	Field Logbook No. EL-1511 ~)		Method of Shipment FED EX		
Shipped To TMA/RECRA RJB 10-28-99	Offsite Property No. A000017		Bill of Lading/Air Bill No. 42357953 1208		
			COA B20CW1 671C		

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

Sample No.	Matrix *	Sample Date	Sample Time										
✓ BOWMJ1	Soil	10-28-99	1227	X						X		BOWSC1	
✓ BOWMJ2	S	10-28-99	1219	X						X		↓	
✓ BOWMJ3	S	10-28-99	1238	X						X		↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris/CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 11/01/99 /0800	Received By: Rikki Thoren / R. Thoren	Date/Time: 11-01-99 /0800
Relinquished By: Rikki Thoren / R. Thoren	Date/Time: 11-01-99 /1430	Received By: FEDEX	Date/Time: 11/1/99
Relinquished By: FedEX	Date/Time: 10:00 11/2/99	Received By: TNU M. Goldenberg	Date/Time: 10:00 11/2/99

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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	B99-078-145	Page 1 of 1

Collector Bowers/Trice	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 *200 B pond*		SAF No. B99-078	
Ice Chest No. ERC 96-039	Field Logbook No. EL-1511-1		Method of Shipment FED EX	
Shipped To TMA/~~RECRA~~ DJO 10-28-99	Offsite Property No. A000017		Bill of Lading/Air Bill No. 42357953 1208	
			COA B20CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	Cool 4C	Cool 4C	None
	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
BOWMJ6	Soil	10-28-99	1245	X	X	X	X						X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C Trice / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 11-01-99/0800	Received By: RIKKI Thoren / R. Thoren	Date/Time: 11-01-99/0800
Relinquished By: RIKKI Thoren / R. Thoren	Date/Time: 11-01-99/1430	Received By: FED EX	Date/Time: 11/1/99
Relinquished By: FedEx	Date/Time: 11/2/99 10:00	Received By: TNV McGoldenberg	Date/Time: 11/2/99 10:00

SPECIAL INSTRUCTIONS
See chain of custody comments on SAF B99-078.

(1) *ICP Metals - 6010A (Supertrace)* {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use Bow 861 to ship

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	B99-078-146	Page 1 of 1

Collector: Bowers/Trice	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: 200 B pond BP-9		SAF No.: B99-078	
Ice Chest No.: ERC-96-039	Field Logbook No.: EL-1511-1		Method of Shipment: FED EX	
Shipped To: TMA/RECRA 10-28-99 [illegible]	Offsite Property No.: A000017		Bill of Lading/Air Bill No.: 42357953 1208	
			COA: B20CW1 67IC	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Hydrazine - D1385	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.	See item (3) in Special Instructions.		

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN01	Soil	10-28-99	0813	X							X	Bow-8C1	
BOWN02	S	10-28-99	0820	X							X		
BOWN03	S	10-28-99	0829	X							X		
BOWN04	S	10-28-99	0845	X							X		
BOWN05	S	10-28-99	0857	X							X		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: C. Trice / C. TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 110199/0800	Received By: RIKKI Thoren / R. Thoren	Date/Time: 11/01/99/0800
Relinquished By: RIKKI Thoren / R. Thoren	Date/Time: 11.01.99/1430	Received By: FED EX	Date/Time: 11/1/99
Relinquished By: FedEx	Date/Time: 11/2/99 10:00	Received By: TNV M. Goldenberg	Date/Time: 11/2/99 10:00

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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	B99-078-148	Page 1 of 2

Collector Bowers/Trice	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 200 B pond BP-9	SAF No. B99-078	
Ice Chest No. ERC 96-059	Field Logbook No. EL-1511-1	Method of Shipment FED EX	
Shipped To TMA/RECRA DYD 10-28-99	Offsite Property No. A000017	Bill of Lading/Air Bill No. 42357953 1219	
		COA B20CW167/C	

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	Cool 4C	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	120mL	120mL	250mL	250mL	500mL	500mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Nickel-63	Technetium-99	Hydrazine - D1385	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) {1-Propanol, Ethanol}	pH (Soil) - 9045	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (2) in Special Instructions.

Sample No.	Matrix *	Sample Date	Sample Time										
B0WN06	Soil	10-28-99	0903	X	X	X		X				B0WBC1	
DOWN07	S	10-28-99	0910	X	X	X		X				↓	
DOWN08	S	10-28-99	0918	X	X	X		X				↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: CTRICE / CTRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 11.01.99 / 0800	Received By: RIKKI Thore / R. Thoran	Date/Time: 11.01.99 / 0800
Relinquished By: RIKKI Thore / R. Thoran	Date/Time: 11.01.99 / 1430	Received By: FED EX	Date/Time: 11/1/99
Relinquished By: FedEx	Date/Time: 11/2/99 10:00	Received By: TNN M. Goldenberg	Date/Time: 11/2/99 10:00

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Beryllium, Copper, Nickel, 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

use DOW8C1 to ship

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	B99-078-148	Page 2 of 2

Collector Bowers/Trice	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 200 B pond BP-9	SAF No. B99-078	
Ice Chest No. ERC 96-059	Field Logbook No. EL-1511-1	Method of Shipment FED EX	
Shipped To TMA/RECRA [illegible] 10-28-99	Offsite Property No. A000017	Bill of Lading/Air Bill No. 42357953 1219	
		COA B20CW1671C	

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										
B0WN06	Soil	10-28-99	0903	X *								BOWBCI	
BOWN07	S	10-28-99	0910	X *								↓	
BOWN08	S	10-28-99	0918	X *								↓	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Chris C TRICE	Date/Time: 10/28/99 1430	Received By: Ref 3B	Date/Time: 10/28/99 1430
Relinquished By: Ref 3B	Date/Time: 11.01.99 /0800	Received By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99 0800
Relinquished By: RIKKI Thoren R. Thoren	Date/Time: 11.01.99 /1430	Received By: FED EX	Date/Time: 11/1/99
Relinquished By: FedEx	Date/Time: 11/2/99 10:00	Received By: TNU M. Goldenberg 10:00	Date/Time: 11/2/99

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

use Bow8C1 to ship

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 11/2/99 10:00

CoC No. B99-078-144,145,146

Container I.D. No. _____ Requested TAT (Days) 95 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: 9
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: 11-2-99 Time: 10:00

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 11-2-99 10:00

CoC No. B99-078-148.

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: 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: 11-2-99 Time: 10:00

LOGIN

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

PROGRAM MANAGER

Sample holding times exceeded? Yes [ ] No [ ]

Client Notified: Name _____ Date/time _____