H0503-TMA/REC

0052631

RECRA ENVIRONMENTAL INC.

Chemical and Environmental Measurement Information

JAN 2000 RECEIVED Data Log In

Recra LabNet Philadelphia
Analytical Report
****REVISION****

Client : TNU-HANFORD B99-078
RFW# : 9908L883
SDG# : H0503
SAF# : B99-078

W.O. # : 10985-001-001-9999-00
Date Received: 08-26-99

RECEIVED FEB 28 2000 EDMC

INORGANIC CASE NARRATIVE

This report is revised to include matrix quality control analyses for Ammonia, Nitrate Nitrite and Total Cyanide.

1. This narrative covers the analyses of 7 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 with the exception of Total Cyanide matrix quality control analysis which was performed past hold.

4. The cooler temperatures were recorded on the chain-of-custody.

5. The method blanks were within method criteria.

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

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

8. The replicate analyses were within the 20% RPD control limit.

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

Pat E

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

1-14-00
Date

njp\i08-883r

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 28 pages.

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

Recra LabNet Philadelphia

WET CHEMISTRY
METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ 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 ~~351~~ ~~350.1~~ 350.3

Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate } EPA 300.0

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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 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0W884	% Solids	91.5		%	0.01	1.0
		Chloride by IC	2.4		MG/KG	1.4	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	1.4	u	MG/KG	1.4	1.0
		Nitrate by IC	55		MG/KG	2.7	1.0
		Cyanide, Total	0.55	u	MG/KG	0.55	1.0
		Phosphate by IC	2.4		MG/KG	1.4	1.0
		Chromium VI	0.44	u	MG/KG	0.44	1.0
		Sulfate by IC	6.6		MG/KG	1.4	1.0
		Nitrate Nitrite	13.7		MG/KG	0.54	5.0
		Ammonia, as N	1.4	u	MG/KG	1.4	1.0
		pH	9.6		SOIL PH	0.01	1.0
		Sulfide	4.2		MG/KG	1.1	1.0
-002	B0W885	% Solids	82.1		%	0.01	1.0
		Chloride by IC	14.0		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	250		MG/KG	30	10
		Cyanide, Total	0.61	u	MG/KG	0.61	1.0
		Phosphate by IC	1.5	u	MG/KG	1.5	1.0
		Chromium VI	0.49	u	MG/KG	0.49	1.0
		Sulfate by IC	92.1		MG/KG	3.0	2.0
		Nitrate Nitrite	63.2		MG/KG	3.0	25.0
		Ammonia, as N	1.5	u	MG/KG	1.5	1.0
		pH	8.5		SOIL PH	0.01	1.0
		Sulfide	1.2	u	MG/KG	1.2	1.0
-003	B0W886	% Solids	82.3		%	0.01	1.0
		Chloride by IC	10.5		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	230		MG/KG	30	10
		Cyanide, Total	0.61	u	MG/KG	0.61	1.0
		Phosphate by IC	1.7		MG/KG	1.5	1.0
		Chromium VI	0.49	u	MG/KG	0.49	1.0
		Sulfate by IC	61.8		MG/KG	1.5	1.0
		Nitrate Nitrite	36.6		MG/KG	1.2	10.0
		Ammonia, as N	1.5	u	MG/KG	1.5	1.0
		pH	8.4		SOIL PH	0.01	1.0

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INORGANICS DATA SUMMARY REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0W886	Sulfide	1.2 u	MG/KG	1.2	1.0
-004	B0W887	% Solids	83.8	%	0.01	1.0
		Chloride by IC	11.8	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	180	MG/KG	30	10
		Cyanide, Total	0.60 u	MG/KG	0.60	1.0
		Phosphate by IC	1.5 u	MG/KG	1.5	1.0
		Chromium VI	0.48 u	MG/KG	0.48	1.0
		Sulfate by IC	64.0	MG/KG	3.0	2.0
		Nitrate Nitrite	47.0	MG/KG	1.2	10.0
		Ammonia, as N	1.5 u	MG/KG	1.5	1.0
		pH	8.5	SOIL PH	0.01	1.0
		Sulfide	1.2 u	MG/KG	1.2	1.0
-005	B0W888	% Solids	90.0	%	0.01	1.0
		Chloride by IC	11.8	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	81	MG/KG	11	4.0
		Cyanide, Total	0.56 u	MG/KG	0.56	1.0
		Phosphate by IC	1.4	MG/KG	1.4	1.0
		Chromium VI	0.44 u	MG/KG	0.44	1.0
		Sulfate by IC	57.1	MG/KG	5.6	4.0
		Nitrate Nitrite	17.4	MG/KG	0.55	5.0
		Ammonia, as N	1.4 u	MG/KG	1.4	1.0
		pH	9.1	SOIL PH	0.01	1.0
		Sulfide	1.1 u	MG/KG	1.1	1.0
-006	B0W890	% Solids	89.2	%	0.01	1.0
		Chloride by IC	8.2	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	30	MG/KG	2.8	1.0
		Cyanide, Total	0.56 u	MG/KG	0.56	1.0
		Phosphate by IC	1.4 u	MG/KG	1.4	1.0
		Chromium VI	0.45 u	MG/KG	0.45	1.0
		Sulfate by IC	38.5	MG/KG	1.4	1.0
		Nitrate Nitrite	6.2	MG/KG	0.55	5.0

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INORGANICS DATA SUMMARY REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	B0W890	Ammonia, as N	1.4	u	MG/KG	1.4	1.0
		pH	9.2		SOIL PH	0.01	1.0
		Sulfide	1.1	u	MG/KG	1.1	1.0
-007	B0W891	% Solids	90.8		%	0.01	1.0
		Chloride by IC	4.4		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	4.7		MG/KG	2.8	1.0
		Cyanide, Total	0.55	u	MG/KG	0.55	1.0
		Phosphate by IC	1.4	u	MG/KG	1.4	1.0
		Chromium VI	0.44	u	MG/KG	0.44	1.0
		Sulfate by IC	29.3		MG/KG	1.4	1.0
		Nitrate Nitrite	0.96		MG/KG	0.11	1.0
		Ammonia, as N	1.3	u	MG/KG	1.3	1.0
		pH	9.3		SOIL PH	0.01	1.0
		Sulfide	1.1	u	MG/KG	1.1	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	99LIC078-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
		Fluoride by IC	2.5 u	MG/KG	2.5	1.0
		Nitrite by IC	1.2 u	MG/KG	1.2	1.0
		Nitrate by IC	2.5 u	MG/KG	2.5	1.0
		Phosphate by IC	1.2 u	MG/KG	1.2	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	99LC098-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	99LVI060-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0
BLANK10	99LN3044-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	99LAM034-MB1	Ammonia, as N	1.2 u	MG/KG	1.2	1.0
BLANK10	99LSD040-MB1	Sulfide	1.0 u	MG/KG	1.0	1.0
BLANK10	99LC130A-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	99LAM050-MB1	Ammonia, as N	1.2 u	MG/KG	1.2	1.0
BLANK1	99LC099-MB1	Cyanide, Total	0.50 u	MG/KG	0.50	1.0
BLANK10	99LN3058-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0

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INORGANICS ACCURACY REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0W884	Chloride by IC	29.2	2.4	27.3	97.9	1.0
		Chloride by IC MSD	29.3	2.4	27.3	98.4	1.0
		Fluoride by IC	60.0	0.0	54.6	109.9	1.0
		Fluoride by IC MSD	60.2	0.0	54.6	110.2	1.0
		Nitrite by IC	28	1.4 u	27	102.5	1.0
		Nitrite by IC MSD	28	1.4 u	27	103.5	1.0
		Nitrate by IC	170	55	110	101.0	4.0
		Nitrate by IC MSD	160	55	110	100.1	4.0
		Phosphate by IC	29.9	2.4	27.3	100.5	1.0
		Phosphate by IC MSD	29.9	2.4	27.3	100.8	1.0
		Soluble Chromium VI	4.2	0.44	4.4	99.1	1.0
		Insoluble Chromium VI	1210	0.44	1180	103.2	100
		Sulfate by IC	34.1	6.6	27.3	101.0	1.0
		Sulfate by IC MSD	34.2	6.6	27.3	101.4	1.0
-004	B0W887	Cyanide, Total	5.9	0.60u	6.0	98.9	1.0
		Ammonia, as N	119	1.5 u	118	100.8	1.0
-007	B0W891	Nitrate Nitrite	6.6	0.96	5.5	103.0	1.0
		Sulfide	383	0.0	436	87.8	1.0
		Sulfide MSD	397	0.0	436	91.1	1.0
BLANK10	99LIC078-MB1	Chloride by IC	23.7	1.2 u	25.0	94.7	1.0
		Fluoride by IC	52.7	2.5 u	50.0	105.4	1.0
		Nitrite by IC	24	1.2 u	25	98.0	1.0
		Nitrate by IC	24	2.5 u	25	97.3	1.0
		Phosphate by IC	25.6	1.2 u	25.0	102.5	1.0
		Sulfate by IC	23.7	1.2 u	25.0	94.7	1.0
BLANK10	99LVI060-MB1	Soluble Chromium VI	4.2	0.40u	4.0	104.3	1.0
		Insoluble Chromium VI	1220	0.40u	1160	104.6	100
BLANK10	99LN3044-MB1	Nitrate Nitrite	5.0	0.20u	5.0	100.4	1.0
		Nitrate Nitrite MSD	5.0	0.20u	5.0	100.6	1.0
BLANK10	99LAM034-MB1	Ammonia, as N	53.2	1.2 u	50.0	106.5	1.0
		Ammonia, as N MSD	51.8	1.2 u	50.0	103.5	1.0
BLANK10	99LSD040-MB1	Sulfide	9.3	1.0 u	9.9	93.9	1.0
		Sulfide MSD	9.2	1.0 u	9.9	92.9	1.0
BLANK10	99LAM050-MB1	Ammonia, as N	49.5	1.2 u	50.0	99.0	1.0
		Ammonia, as N MSD	50.2	1.2 u	50.0	100.5	1.0
BLANK10	99LN3058-MB1	Nitrate Nitrite	5.0	0.20u	5.0	100	1.0

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INORGANICS DUPLICATE SPIKE REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	B0W884	Chloride by IC	97.9	98.4	0.43
		Fluoride by IC	109.9	110.2	0.28
		Nitrite by IC	102.5	103.5	0.90
		Nitrate by IC	101.0	100.1	0.88
		Phosphate by IC	100.5	100.8	0.26
		Sulfate by IC	101.0	101.4	0.39
-007	B0W891	Sulfide	87.8	91.1	3.6
BLANK10	99LN3044-MB1	Nitrate Nitrite	100.4	100.6	0.20
BLANK10	99LAM034-MB1	Ammonia, as N	106.5	103.5	2.9
BLANK10	99LSD040-MB1	Sulfide	93.9	92.9	1.1
~~LCS20~~	~~99LC130A-LC2~~	~~Cyanide, Total LCS~~	~~98.4~~	~~95.2~~	~~3.3~~ [illegible] 1-14-00
BLANK10	99LAM050-MB1	Ammonia, as N	99.0	100.5	1.5
~~LCS2~~	~~99LC089-LC2~~	~~Cyanide, Total LCS~~	~~93.5~~	~~94.8~~	~~1.4~~ [illegible] 1-14-00

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INORGANICS PRECISION REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078 RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0W884	Chloride by IC	2.4	2.4	0.25	1.0
		Fluoride by IC	2.7 u	2.7 u	NC	1.0
		Nitrite by IC	1.4 u	1.4 u	NC	1.0
		Nitrate by IC	55	55	0.16	1.0
		Phosphate by IC	2.4	2.3	3.7	1.0
		Chromium VI	0.44u	0.44u	NC	1.0
		Sulfate by IC	6.6	6.5	0.50	1.0
		pH	9.6	9.5	0.8	1.0
-004REP	B0W887	Cyanide, Total	0.60u	0.60u	NC	1.0
		Ammonia, as N	1.5 u	1.5 u	NC	1.0
-007REP	B0W891	% Solids	90.8	91.8	1.1	1.0
		Nitrate Nitrite	0.96	1.2	18.2	1.0
		Sulfide	1.1 u	1.1 u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 12/31/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L883

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99LC098-LC1	Cyanide, Total LCS	1.8	2.0	MG/KG	91.8
LCS2	99LC098-LC2	Cyanide, Total LCS	8.7	10	MG/KG	87.4
LCS10	99LC130A-LC1	Cyanide, Total LCS	2.0	2.0	MG/KG	98.4
LCS20	99LC130A-LC2	Cyanide, Total LCS	9.5	10	MG/KG	95.2
LCS1	99LC099-LC1	Cyanide, Total LCS	1.9	2.0	MG/KG	93.5
LCS2	99LC099-LC2	Cyanide, Total LCS	9.5	10	MG/KG	94.8

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

DATE RECEIVED: 08/26/99 RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W884						
% SOLIDS	001	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
CHLORIDE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
CHLORIDE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
CHLORIDE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	001	S	99LC098	08/24/99	09/03/99	09/03/99
PHOSPHATE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
PHOSPHATE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	001	S	99LVI060	08/24/99	09/02/99	09/02/99
CHROMIUM VI	001 REP	S	99LVI060	08/24/99	09/02/99	09/02/99
CHROMIUM VI	001 MS	S	99LVI060	08/24/99	09/02/99	09/02/99
CHROMIUM VI	001 MSD	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	001	S	99LIC078	08/24/99	09/21/99	09/21/99
SULFATE BY IC	001 REP	S	99LIC078	08/24/99	09/21/99	09/21/99
SULFATE BY IC	001 MS	S	99LIC078	08/24/99	09/21/99	09/21/99
SULFATE BY IC	001 MSD	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	001	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	001	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	001	S	99LPH093	08/24/99	08/31/99	08/31/99
PH	001 REP	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	001	S	99LSD040	08/24/99	08/30/99	08/30/99

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

DATE RECEIVED: 08/26/99 RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W885						
% SOLIDS	002	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	002	S	99LC098	08/24/99	09/03/99	09/03/99
PHOSPHATE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	002	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	002	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	002	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	002	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	002	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	002	S	99LSD040	08/24/99	08/30/99	08/30/99
B0W886						
% SOLIDS	003	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	003	S	99LC098	08/24/99	09/03/99	09/03/99
PHOSPHATE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	003	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	003	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	003	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	003	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	003	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	003	S	99LSD040	08/24/99	08/30/99	08/30/99
B0W887						
% SOLIDS	004	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99

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

DATE RECEIVED: 08/26/99 RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	004	S	99LC098	08/24/99	09/03/99	09/03/99
TOTAL CYANIDE	004 REP	S	99LC130A	08/24/99	12/07/99	12/08/99
TOTAL CYANIDE	004 MS	S	99LC130A	08/24/99	12/07/99	12/08/99
PHOSPHATE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	004	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	004	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	004	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	004	S	99LAM034	08/24/99	09/14/99	09/14/99
AMMONIA	004 REP	S	99LAM050	08/24/99	12/28/99	12/29/99
AMMONIA	004 MS	S	99LAM050	08/24/99	12/28/99	12/29/99
PH	004	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	004	S	99LSD040	08/24/99	08/30/99	08/30/99
B0W888						
% SOLIDS	005	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	005	S	99LC098	08/24/99	09/03/99	09/03/99
PHOSPHATE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	005	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	005	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	005	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	005	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	005	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	005	S	99LSD040	08/24/99	08/30/99	08/30/99
B0W890						
% SOLIDS	006	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99

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

DATE RECEIVED: 08/26/99 RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL CYANIDE	006	S	99LC098	08/24/99	09/03/99	09/03/99
PHOSPHATE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	006	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	006	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	006	S	99LN3044	08/24/99	09/08/99	09/09/99
AMMONIA	006	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	006	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	006	S	99LSD040	08/24/99	08/30/99	08/30/99
B0W891						
% SOLIDS	007	S	99L%S119	08/24/99	08/30/99	08/31/99
% SOLIDS	007 REP	S	99L%S119	08/24/99	08/30/99	08/31/99
CHLORIDE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
FLUORIDE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRITE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
TOTAL CYANIDE	007	S	99LC099	08/24/99	09/06/99	09/06/99
PHOSPHATE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
CHROMIUM VI	007	S	99LVI060	08/24/99	09/02/99	09/02/99
SULFATE BY IC	007	S	99LIC078	08/24/99	09/21/99	09/21/99
NITRATE NITRITE	007	S	99LN3044	08/24/99	09/08/99	09/09/99
NITRATE NITRITE	007 REP	S	99LN3058	08/24/99	12/07/99	12/07/99
NITRATE NITRITE	007 MS	S	99LN3058	08/24/99	12/07/99	12/07/99
AMMONIA	007	S	99LAM034	08/24/99	09/14/99	09/14/99
PH	007	S	99LPH093	08/24/99	08/31/99	08/31/99
SULFIDE	007	S	99LSD040	08/24/99	08/30/99	08/30/99
SULFIDE	007 REP	S	99LSD040	08/24/99	08/30/99	08/30/99
SULFIDE	007 MS	S	99LSD040	08/24/99	08/30/99	08/30/99
SULFIDE	007 MSD	S	99LSD040	08/24/99	08/30/99	08/30/99

LAB QC:

CHLORIDE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
CHLORIDE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
FLUORIDE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
FLUORIDE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRITE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99

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

DATE RECEIVED: 08/26/99 RFW LOT # :9908L883

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
TOTAL CYANIDE	LC1 L	S	99LC098	N/A	09/03/99	09/03/99
TOTAL CYANIDE	LC2 L	S	99LC098	N/A	09/03/99	09/03/99
TOTAL CYANIDE	MB1	S	99LC098	N/A	09/03/99	09/03/99
PHOSPHATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
PHOSPHATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
CHROMIUM VI	MB1	S	99LVI060	N/A	09/02/99	09/02/99
CHROMIUM VI	MB1 BS	S	99LVI060	N/A	09/02/99	09/02/99
CHROMIUM VI	MB1 BSD	S	99LVI060	N/A	09/02/99	09/02/99
SULFATE BY IC	MB1	S	99LIC078	N/A	09/21/99	09/21/99
SULFATE BY IC	MB1 BS	S	99LIC078	N/A	09/21/99	09/21/99
NITRATE NITRITE	MB1	S	99LN3044	N/A	09/08/99	09/09/99
NITRATE NITRITE	MB1 BS	S	99LN3044	N/A	09/08/99	09/09/99
NITRATE NITRITE	MB1 BSD	S	99LN3044	N/A	09/08/99	09/09/99
AMMONIA	MB1	S	99LAM034	N/A	09/14/99	09/14/99
AMMONIA	MB1 BS	S	99LAM034	N/A	09/14/99	09/14/99
AMMONIA	MB1 BSD	S	99LAM034	N/A	09/14/99	09/14/99
SULFIDE	MB1	S	99LSD040	N/A	08/30/99	08/30/99
SULFIDE	MB1 BS	S	99LSD040	N/A	08/30/99	08/30/99
SULFIDE	MB1 BSD	S	99LSD040	N/A	08/30/99	08/30/99
TOTAL CYANIDE	LC1 L	S	99LC130A	N/A	12/07/99	12/08/99
TOTAL CYANIDE	LC2 L	S	99LC130A	N/A	12/07/99	12/08/99
TOTAL CYANIDE	MB1	S	99LC130A	N/A	12/07/99	12/08/99
AMMONIA	MB1	S	99LAM050	N/A	12/28/99	12/29/99
AMMONIA	MB1 BS	S	99LAM050	N/A	12/28/99	12/29/99
AMMONIA	MB1 BSD	S	99LAM050	N/A	12/28/99	12/29/99
TOTAL CYANIDE	LC1 L	S	99LC099	N/A	09/06/99	09/06/99
TOTAL CYANIDE	LC2 L	S	99LC099	N/A	09/06/99	09/06/99
TOTAL CYANIDE	MB1	S	99LC099	N/A	09/06/99	09/06/99
NITRATE NITRITE	MB1	S	99LN3058	N/A	12/07/99	12/07/99
NITRATE NITRITE	MB1 BS	S	99LN3058	N/A	12/07/99	12/07/99

RECRA LabNet Use Only: 99081883

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) metals

Client: TWL-Hanford B99-078
Est. Final Proj. Sampling Date:
Project #: 109185-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: spec Del: std TAT: 30 days
Date Rec'd: 8/26/99 Date Due: 9/25/99
Account #:

Refrigerator #		1	6-1						6		6	6					
#/Type Container	Liquid																
	Solid	1g	1g-1						1g		1g	1g					
Volume	Liquid																
	Solid	250	500-1			w/VOA	w/BNA		500		250	1L					
Preservatives																	
ANALYSES REQUESTED		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
		0024H	0025H	OPCB		OGPSC	ODRO		metals		1PH	Ang(1)					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0024H	0025H	OPCB		OGPSC	ODRO		metals		1PH	Ang(1)				
001	BØW884			S	8/24/99	0938	X	X	X		X	X		X		X	X				
2	85					0756															
3	86					0808															
4	87					0826															
5	88					0846															
6	90					0904															
7	91					0930															

Run matrix QC

11/3/99
SB and TL added to all metals samples per client

Special Instructions:
Saf# B99-078

COMPOSITE WASTE

DATE/REVISIONS:
1. Mt(1) = Al, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se,
2. Ag, V, Zn, Hg, ICRG
3. Ang(1) = IN3N2, ICCL, ICFL, ICNO2, ICNO3,
4. ICPO4, ICSO4, ISFD, INH3N, ICNTO
5. OGPSC = ethanol + propanol
6. * 4235795286 79-4.0°C

RECRA LabNet Use Only

Samples were: 1) Shipped ✓ or Hand Delivered
Airbill # 4235795286 79
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. 1.8 °C

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/26/99	0980

Relinquished by	Received by	Date	Time
	Original Rewritten		

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

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-13 <15' bgs		SAF No.: B99-078
Ice Chest No.: ERC96 013 ERC96 043	Field Logbook No.: EL-1511		Method of Shipment: Federal Express
Shipped To: TSA/RECRA 8-24-99	Offsite Property No.: A990229		Bill of Lading/Air Bill No.: 4235 7952 8680
			COA: B20CW167/C

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	Cool 4C	None	Cool 4C	None	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	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions			

Sample No.	Matrix *	Sample Date	Sample Time										
B0W884	Soil	8-24-99	0738		X	X	X	X	X		3.5'-4.5'		
B0W885	Soil	8-24-99	0756		X	X	X	X	X		6'-7'		
B0W886	Soil	8-24-99	0808		X	X	X	X	X		8.5'-9.5'		
B0W887	Soil	8-24-99	0826		X	X	X	X	X		11'-12'		
B0W888	Soil	8-24-99	0846		X	X	X	X	X		14'-15'		

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By: Brent Porter, Date/Time: 8/24/99 13:00	Received By: Peter JB, Date/Time: 8/24/99 13:00	
Relinquished By: REF JB, Date/Time: 82599 1100	Received By: SJGALE, Date/Time: 82599 1100	
Relinquished By: SJGALE, Date/Time: 82599 1100	Received By: FED EX, Date/Time:	
Relinquished By: Declee, Date/Time:	Received By: Janson for DN, Date/Time: 8/26/99 0930	

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC.

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

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

(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 ~~B0W5~~ B0W528 as shipping criteria

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	B99-078-100	Page 1 of 1

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-13 >15' bgs	SAF No.: B99-078	
Ice Chest No.: ERC 96 043	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA BZ 8-24-99	Offsite Property No.: A990229	Bill of Lading/Air Bill No.: 4235 7952 8679	
		COA: B20CW1 67/C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	Cool 4C	None	Cool 4C	None	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	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time										
B0W890 / 18.5'-19.5'	Soil	8-24-99	0904					X	X	X	X	X	
B0W891 / 24'-25'	Soil	8-24-99	0930					X	X	X	X	X	
~~B0W892~~	~~Soil~~												
~~B0W893~~	~~Soil~~	BZ 8-24-99											

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 8/24/99 13:00	Received By: Peter JB	Date/Time: 8/24/99 13:00
Relinquished By: VGF JB	Date/Time: 8/25/99 11:00	Received By: Catherine Sue	Date/Time: 8/25/99 11:00
Relinquished By: Catherine Sue	Date/Time: 8/25/99 11:00	Received By: FEDEX	Date/Time:
Relinquished By: Dedeel	Date/Time:	Received By: Janson for DN	Date/Time: 8/26/99 0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

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

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

(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 BOWJL8 as shipping criteria

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

4.0

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

RECRA LabNet Use Only: 99081906

Custody Transfer Record/Lab Work Request

Page 1 of 1

RECRA LabNet

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) ~~Arrow~~ ~~wet lab~~ Ag metals

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

Refrigerator #		1	6						6		6	6				
#/Type Container	Liquid															
	Solid	1g	1g						1g		1g	1g				
Volume	Liquid															
	Solid	250	500						500		250	~~ur~~				
Preservatives																
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Herb					INORG: 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	8260 24H	8270 25H	8081 PCB	~~8151 Herb~~	8260 SC	8015 DRO	metal (1)		1 PH	Anions (1)
0001	B0W6B0			S	8/25/99	1103	X	X	X		X	X	X		X	X
2	99					1051										
3	97					1004										
4	94					0926										
5	~~B1~~ 92					0845										
6	~~93~~ B1					1118										
7	~~98~~ 93					0909										
8	98					1032										

BATCH WASTE

Run matrix QC

Special Instructions:

SAF # B99-078

9/21/99 Waste code changed to Batch waste

~~8/20/99 IN3N2 canceled~~

8/30/99

~~COMPOSITE WASTE~~

BATCH WASTE

DATE/REVISIONS:

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

11/3/99 SB and TL added to all metals samples per client

*425379528750-4.2°C, *42357952 8749-5.1°C *4476545931-3.8°C

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

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

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

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

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

9908L 906

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

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N	Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 22'-23'		SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511		Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 8.25.99	Offsite Property No.: A990230		Bill of Lading/Air Bill No.: 4235 7952 8771	
			COA: B20CW1-671C	

POSSIBLE SAMPLE HAZARDS/REMARKS

9908L 906

Special Handling and/or Storage

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

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

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

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

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

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

4235 7952 8750 4.2

4235 7952 8749 5.1

4476545 931 3.8

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-86	Page 1 of 21

Collector Bowers/Porter/Nielson	**Company Contact** Chris Cearlock **Telephone No.** 372-9574	**Project Coordinator** TRENT, SJ	**Price Code** 8N **Data Turnaround** 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	**Sampling Location** GP-2 >15' bgs 23' - 21'	**SAF No.** B99-078	
Ice Chest No. GWS 130	**Field Logbook No.** EL-1511	**Method of Shipment** Federal Express	
Shipped To ~~TAA~~/RECRA	**Offsite Property No.** A990230	**Bill of Lading/Air Bill No.** 4235 7152 8712	
		COA B20CW1 671C	

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

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

CHAIN OF POSSESSION — *Sign/Print Names*

Relinquished By	Date/Time	Received By	Date/Time
Brent Porter	8/25/99/1410	Peter JB	8/25/99/1410
RFG JB	8/26/99 11:00	CTRICE/Chris	8/26/99 11:00
CTRICE/Chris	8/26/99 14:00	FEDEX	
Fed Ex	8-27-99/0930	D. Smith	8-27-99/0930

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

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

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

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

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

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 15-16'	SAF No.: B99-078	
Ice Chest No.: GWS 130	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 9714	
		COA: B20CW1 671C	

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

Sample No.	Matrix *	Sample Date	Sample Time										
B0W697	Soil	8/25/99	10:04						X	X	X	X	X
												B0-541	

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

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

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

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

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

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

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

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Price Code: 8N	Data Turnaround: 45 Days		
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 <15' bgs 14'-15'	SAF No.: B99-078	
Ice Chest No.: ETC6-96059	Field Logbook No.: EL-1511	Method of Shipment: Federal Express	
Shipped To: ~~TMA~~/RECRA 0700 8-25-99	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A	
		COA: B20CW1 6716	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

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

Sample No.	Matrix *	Sample Date	Sample Time										
B0W694	Soil	8/25/99	09:26			X	X	X	X	X	~~X~~ DKO	DKO 8-27-99	

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

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

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

COLLECTOR UNAVAILABLE TO SIGN COC.

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

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

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

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

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions		
Sample No. / Matrix * / Sample Date / Sample Time										
05 B0W692 / Soil / 8/25/99 / 08:45			X	X	X	X	X		D0W569	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter, Date/Time: 8/25/99/1410	Received By: Peter JB, Date/Time: 8/25/99/1410		
Relinquished By: Peter J-B, Date/Time: 8-26-99 0800	Received By: R. Fahlberg / R. Fahlberg, Date/Time: 0800 8-26-99		
Relinquished By: R. Fahlberg / R. Fahlberg, Date/Time: 1400 8-26-99	Received By: FED Ex, Date/Time:		
Relinquished By: Fed Ex, Date/Time: 8-27-99/0930	Received By: D. Amato, Date/Time: 8-27-99/0930		
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

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

COLLECTOR UNAVAILABLE TO SIGN COC...

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-88	Page 1 of 21

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

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS													
			Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
			Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
			No. of Container(s)	1	1	1	1	1	1	1	1	1	1
			Volume	60mL	60mL	60mL	60mL	120mL	250ml	250mL	500mL	500ml	1000mL
				Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (ECL), VOA - 8260A (Add-On) [1-Propanol, Ethanol]	pH (Soil) - 9045	Semi-VOA - 8270A (ECL), TPH-Diesel Range - W TPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
306 B0W6B1	Soil	8/25/99	11:18						X	X	X	X	X
											Bowers-M		

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter — Date/Time: 8/25/99/1410	Received By: Peter JB — Date/Time: 8/25/99/1410		
Relinquished By: Peter JB — Date/Time: 8-26-99 0800	Received By: R. Falkenberg / R. Falkenberg — Date/Time: 0800 8-26-99		
Relinquished By: R. Falkenberg / R. Falkenberg — Date/Time: 8-26-99 1400	Received By: Fed Ex — Date/Time:		
Relinquished By: Fed Ex — Date/Time: 8-27-99/0930	Received By: [signature] — Date/Time: 8-27-99/0930		
LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

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

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

collector not available to sign COC

Matrix *

Soil
Water
Vapor
Other Solid
Other Liquid

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

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

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

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

Sample No.	Matrix *	Sample Date	Sample Time										
07 B0W693	Soil	8/25/99	09:09			X	X	X	X	X		Dup of 40	

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

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

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

collector not available to sign COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

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

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-2 >15' bgs 17.5 - 18.5	SAF No.: B99-078	
Ice Chest No.: ERC 96-051	Field Logbook No.: EL-1501	Method of Shipment: Federal Express	
Shipped To: ~~IMA~~/RECRA	Offsite Property No.: A990230	Bill of Lading/Air Bill No.: 4235 7952 8150	
		COA: B20CW1 + B20CW1 1671C	

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

Sample No.	Matrix *	Sample Date	Sample Time	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D, PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
008 B0W698	Soil	8/25/99	10:32						X	X	X	X	X
												Dawn M.	

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

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

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

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

collector not available to sign coc

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

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