H0528-TMA/RECRA

RECRA ENVIRONMENTAL INC.

0052709

Chemical and Environmental Measurement Information

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

Client : TNU-HANFORD B99-078
RFW# : 9909L069
SDG/SAF #: H0528/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 09-11-99

RECEIVED MAR 20 2000 EDMC

SEMIVOLATILE

This narrative was corrected to add the TIC search for Tributylphosphate.

Six (6) soil samples were collected on 09-09-99.

The samples and their associated QC samples were extracted on 09-17-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Methods 8270B for TCL Semivolatile target compounds on 09-30-99.

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. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. These samples were spectrally searched for Butylated Hydroxytoluene and Tributylphosphate; however, they were not identified in the samples.

FEB 2000

J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

01-27-00
Date

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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 21 pages.

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GLOSSARY OF BNA DATA

DATA QUALIFIERS

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

mmz\10-94\gloss.bna

GLOSSARY OF BNA DATA

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

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Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 10/19/99 15:34

RFW Batch Number: **9909L069** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1a

	Cust ID:	B0WBJ2		B0WBJ2		B0WBJ2		B0WBJ3		B0WBJ4		B0WBJ5	
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	77	%	62	%	76	%	77	%	78	%	78	%
	2-Fluorobiphenyl	76	%	61	%	75	%	76	%	76	%	75	%
	Terphenyl-d14	79	%	63	%	75	%	79	%	84	%	75	%
	Phenol-d5	71	%	59	%	71	%	69	%	69	%	73	%
	2-Fluorophenol	71	%	59	%	70	%	66	%	70	%	71	%
	2,4,6-Tribromophenol	70	%	60	%	71	%	56	%	64	%	61	%
Phenol		360	U	57	%	70	%	380	U	360	U	360	U
bis(2-Chloroethyl)ether		360	U	360	U	360	U	380	U	360	U	360	U
2-Chlorophenol		360	U	58	%	70	%	380	U	360	U	360	U
1,3-Dichlorobenzene		360	U	360	U	360	U	380	U	360	U	360	U
1,4-Dichlorobenzene		360	U	60	%	72	%	380	U	360	U	360	U
1,2-Dichlorobenzene		360	U	360	U	360	U	380	U	360	U	360	U
2-Methylphenol		360	U	360	U	360	U	380	U	360	U	360	U
2,2'-oxybis(1-Chloropropane)		360	U	360	U	360	U	380	U	360	U	360	U
4-Methylphenol		360	U	360	U	360	U	380	U	360	U	360	U
N-Nitroso-di-n-propylamine		360	U	68	%	86	%	380	U	360	U	360	U
Hexachloroethane		360	U	360	U	360	U	380	U	360	U	360	U
Nitrobenzene		360	U	360	U	360	U	380	U	360	U	360	U
Isophorone		360	U	360	U	360	U	380	U	360	U	360	U
2-Nitrophenol		360	U	360	U	360	U	380	U	360	U	360	U
2,4-Dimethylphenol		360	U	360	U	360	U	380	U	360	U	360	U
bis(2-Chloroethoxy)methane		360	U	360	U	360	U	380	U	360	U	360	U
2,4-Dichlorophenol		360	U	360	U	360	U	380	U	360	U	360	U
1,2,4-Trichlorobenzene		360	U	61	%	76	%	380	U	360	U	360	U
Naphthalene		360	U	360	U	360	U	380	U	360	U	360	U
4-Chloroaniline		360	U	360	U	360	U	380	U	360	U	360	U
Hexachlorobutadiene		360	U	360	U	360	U	380	U	360	U	360	U
4-Chloro-3-methylphenol		360	U	55	%	71	%	380	U	360	U	360	U
2-Methylnaphthalene		360	U	360	U	360	U	380	U	360	U	360	U
Hexachlorocyclopentadiene		360	U	360	U	360	U	380	U	360	U	360	U
2,4,6-Trichlorophenol		360	U	360	U	360	U	380	U	360	U	360	U
2,4,5-Trichlorophenol		900	U	900	U	900	U	940	U	900	U	890	U

*= Outside of EPA CLP QC limits.

Cust ID:	B0WBJ2		B0WBJ2		B0WBJ2		B0WBJ3		B0WBJ4		B0WBJ5	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	360	U	360	U	360	U	380	U	360	U	360	U
2-Nitroaniline	900	U	900	U	900	U	940	U	900	U	890	U
Dimethylphthalate	360	U	360	U	360	U	380	U	360	U	360	U
Acenaphthylene	360	U	360	U	360	U	380	U	360	U	360	U
2,6-Dinitrotoluene	360	U	360	U	360	U	380	U	360	U	360	U
3-Nitroaniline	900	U	900	U	900	U	940	U	900	U	890	U
Acenaphthene	360	U	63	%	79	%	380	U	360	U	360	U
2,4-Dinitrophenol	900	U	900	U	900	U	940	U	900	U	890	U
4-Nitrophenol	900	U	46	%	68	%	940	U	900	U	890	U
Dibenzofuran	360	U	360	U	360	U	380	U	360	U	360	U
2,4-Dinitrotoluene	360	U	62	%	78	%	380	U	360	U	360	U
Diethylphthalate	360	U	360	U	360	U	380	U	360	U	360	U
4-Chlorophenyl-phenylether	360	U	360	U	360	U	380	U	360	U	360	U
Fluorene	360	U	360	U	360	U	380	U	360	U	360	U
4-Nitroaniline	900	U	900	U	900	U	940	U	900	U	890	U
4,6-Dinitro-2-methylphenol	900	U	900	U	900	U	940	U	900	U	890	U
N-Nitrosodiphenylamine (1)	360	U	360	U	360	U	380	U	360	U	360	U
4-Bromophenyl-phenylether	360	U	360	U	360	U	380	U	360	U	360	U
Hexachlorobenzene	360	U	360	U	360	U	380	U	360	U	360	U
Pentachlorophenol	900	U	61	%	77	%	940	U	900	U	890	U
Phenanthrene	360	U	360	U	360	U	380	U	360	U	360	U
Anthracene	360	U	360	U	360	U	380	U	360	U	360	U
Carbazole	360	U	360	U	360	U	380	U	360	U	360	U
Di-n-butylphthalate	360	U	360	U	360	U	380	U	360	U	360	U
Fluoranthene	360	U	360	U	360	U	380	U	360	U	360	U
Pyrene	360	U	64	%	78	%	380	U	360	U	360	U
Butylbenzylphthalate	360	U	360	U	360	U	380	U	360	U	360	U
3,3'-Dichlorobenzidine	360	U	360	U	360	U	380	U	360	U	360	U
Benzo(a)anthracene	360	U	360	U	360	U	380	U	360	U	360	U
Chrysene	360	U	360	U	360	U	380	U	360	U	360	U
bis(2-Ethylhexyl)phthalate	360	U	360	U	360	U	380	U	360	U	360	U
Di-n-octyl phthalate	360	U	360	U	360	U	380	U	360	U	360	U
Benzo(b)fluoranthene	360	U	360	U	360	U	380	U	360	U	360	U
Benzo(k)fluoranthene	360	U	360	U	360	U	380	U	360	U	360	U
Benzo(a)pyrene	360	U	360	U	360	U	380	U	360	U	360	U
Indeno(1,2,3-cd)pyrene	360	U	360	U	360	U	380	U	360	U	360	U
Dibenz(a,h)anthracene	360	U	360	U	360	U	380	U	360	U	360	U
Benzo(g,h,i)perylene	360	U	360	U	360	U	380	U	360	U	360	U

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

Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 10/19/99 15:34

RFW Batch Number: **9909L069** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2a

	Cust ID:	B0WBJ8		B0WBJ9		SBLKCW		SBLKCW BS	
Sample Information	RFW#:	005		006		99LE1131-MB1		99LE1131-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	51	%	74	%	74	%	78	%
	2-Fluorobiphenyl	61	%	69	%	72	%	77	%
	Terphenyl-d14	71	%	78	%	82	%	75	%
	Phenol-d5	55	%	68	%	69	%	71	%
	2-Fluorophenol	55	%	64	%	66	%	70	%
	2,4,6-Tribromophenol	62	%	49	%	58	%	69	%
Phenol		360	U	370	U	330	U	70	%
bis(2-Chloroethyl)ether		360	U	370	U	330	U	330	U
2-Chlorophenol		360	U	370	U	330	U	71	%
1,3-Dichlorobenzene		360	U	370	U	330	U	330	U
1,4-Dichlorobenzene		360	U	370	U	330	U	76	%
1,2-Dichlorobenzene		360	U	370	U	330	U	330	U
2-Methylphenol		360	U	370	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		360	U	370	U	330	U	330	U
4-Methylphenol		360	U	370	U	330	U	330	U
N-Nitroso-di-n-propylamine		360	U	370	U	330	U	86	%
Hexachloroethane		360	U	370	U	330	U	330	U
Nitrobenzene		360	U	370	U	330	U	330	U
Isophorone		360	U	370	U	330	U	330	U
2-Nitrophenol		360	U	370	U	330	U	330	U
2,4-Dimethylphenol		360	U	370	U	330	U	330	U
bis(2-Chloroethoxy)methane		360	U	370	U	330	U	330	U
2,4-Dichlorophenol		360	U	370	U	330	U	330	U
1,2,4-Trichlorobenzene		360	U	370	U	330	U	79	%
Naphthalene		360	U	370	U	330	U	330	U
4-Chloroaniline		360	U	370	U	330	U	330	U
Hexachlorobutadiene		360	U	370	U	330	U	330	U
4-Chloro-3-methylphenol		360	U	370	U	330	U	68	%
2-Methylnaphthalene		360	U	370	U	330	U	330	U
Hexachlorocyclopentadiene		360	U	370	U	330	U	330	U
2,4,6-Trichlorophenol		360	U	370	U	330	U	330	U
2,4,5-Trichlorophenol		900	U	920	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	B0WBJ8		B0WBJ9		SBLKCW		SBLKCW BS	
RFW#:	005		006		99LE1131-MB1		99LE1131-MB1	
2-Chloronaphthalene	360	U	370	U	330	U	330	U
2-Nitroaniline	900	U	920	U	840	U	840	U
Dimethylphthalate	360	U	370	U	330	U	330	U
Acenaphthylene	360	U	370	U	330	U	330	U
2,6-Dinitrotoluene	360	U	370	U	330	U	330	U
3-Nitroaniline	900	U	920	U	840	U	840	U
Acenaphthene	360	U	370	U	330	U	81	%
2,4-Dinitrophenol	900	U	920	U	840	U	840	U
4-Nitrophenol	900	U	920	U	840	U	66	%
Dibenzofuran	360	U	370	U	330	U	330	U
2,4-Dinitrotoluene	360	U	370	U	330	U	80	%
Diethylphthalate	360	U	370	U	330	U	330	U
4-Chlorophenyl-phenylether	360	U	370	U	330	U	330	U
Fluorene	360	U	370	U	330	U	330	U
4-Nitroaniline	900	U	920	U	840	U	840	U
4,6-Dinitro-2-methylphenol	900	U	920	U	840	U	840	U
N-Nitrosodiphenylamine (1)	360	U	370	U	330	U	330	U
4-Bromophenyl-phenylether	360	U	370	U	330	U	330	U
Hexachlorobenzene	360	U	370	U	330	U	330	U
Pentachlorophenol	900	U	920	U	840	U	71	%
Phenanthrene	360	U	370	U	330	U	330	U
Anthracene	360	U	370	U	330	U	330	U
Carbazole	360	U	370	U	330	U	330	U
Di-n-butylphthalate	360	U	370	U	330	U	330	U
Fluoranthene	360	U	370	U	330	U	330	U
Pyrene	360	U	370	U	330	U	76	%
Butylbenzylphthalate	360	U	370	U	330	U	330	U
3,3'-Dichlorobenzidine	360	U	370	U	330	U	330	U
Benzo(a)anthracene	360	U	370	U	330	U	330	U
Chrysene	360	U	370	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	360	U	370	U	330	U	330	U
Di-n-octyl phthalate	360	U	370	U	330	U	330	U
Benzo(b)fluoranthene	360	U	370	U	330	U	330	U
Benzo(k)fluoranthene	360	U	370	U	330	U	330	U
Benzo(a)pyrene	360	U	370	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	360	U	370	U	330	U	330	U
Dibenz(a,h)anthracene	360	U	370	U	330	U	330	U
Benzo(g,h,i)perylene	360	U	370	U	330	U	330	U

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ2

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093006

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 8 decanted: (Y/N) __ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.51	100	JB
2.	ALDOL CONDENSATE	9.05	200	JAB
3.	ALDOL CONDENSATE	9.83	200	JA
4.	ALDOL CONDENSATE	10.99	90	JA
5.	ALKANE	29.72	70	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ3

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093009

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 12 decanted: (Y/N) __ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

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	8.50	100	JB
2.	ALDOL CONDENSATE	9.05	200	JAB
3.	ALDOL CONDENSATE	9.82	100	JA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ4

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093010

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 8 decanted: (Y/N) __ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

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	8.50	90	JB
2.	ALDOL CONDENSATE	8.75	70	JA
3.	ALDOL CONDENSATE	9.04	100	JAB
4.	ALDOL CONDENSATE	9.82	100	JA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ5

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093011

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 6 decanted: (Y/N) __ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

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	8.50	100	JB
2.	ALDOL CONDENSATE	9.04	200	JAB
3.	ALDOL CONDENSATE	9.82	100	JA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ8

Lab Name: Recra LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093012

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 8 decanted: (Y/N) __ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.50	90	JB

FORM 1 SV-TIC 3/90

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0WBJ9

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L069-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093013

Level: (low/med) LOW Date Received: 09/11/99

% Moisture: 9 decanted: (Y/N) Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

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	8.49	100	JB
2.	ALDOL CONDENSATE	9.03	200	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKCW

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 99LE1131-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D093003

Level: (low/med) LOW Date Received: 09/17/99

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 09/17/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/30/99

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	8.50	100	J
2.	ALDOL CONDENSATE	9.05	70	JA

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

DATE RECEIVED: 09/11/99 RFW LOT # :9909L069

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WBJ2	001	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ2	001 MS	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ2	001 MSD	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ3	002	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ4	003	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ5	004	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ8	005	S	99LE1131	09/09/99	09/17/99	09/30/99
B0WBJ9	006	S	99LE1131	09/09/99	09/17/99	09/30/99

LAB QC:

SBLKCW	MB1	S	99LE1131	N/A	09/17/99	09/30/99
SBLKCW	MB1 BS	S	99LE1131	N/A	09/17/99	09/30/99

RECRA LabNet Use Only

9909L069

Custody Transfer Record/Lab Work Request

Page 1 of 2

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) gcms VOA BNA PCB pesticide Schnell metals diag

RECRA LabNet

Client: TWU - HANFORD B99-078

Est. Final Proj. Sampling Date:

Project #: 10985-001-001-9999-00

Project Contact/Phone #:

RECRA Project Manager: O. Johnson

QC: Del: TAT: 30 day

Date Rec'd: 9-11-99 Date Due: 10-11-99

Account #:

Refrigerator #		1	6	1		6	1	6	6	6							
#/Type Container	Liquid																
	Solid	1G	1G	1		1G	1	1G	1G	1G							
Volume	Liquid																
	Solid	250	500	1		500	1	250	500	1000							
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
		OGC24H	OGC25H	OPCB		OGCSC	ODRO	IPH	Met①	ICNTO	IN3N2	ISFD	INHSN	INORO			

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	OGC24H	OGC25H	OPCB		OGCSC	ODRO	IPH	Met①	ICNTO	IN3N2	ISFD	INHSN	INORO
001	BOWBT2			S	9-9-99	0724	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
002	3					0738													
003	4					0748													
004	5					0806													
005	8					0823													
006	9					0845													
007	9NO				9-10-99	0737													
008	1					0749													
009	2					0758													
010	3					0805													

Special Instructions:

SAF # = B99-078

COMPOSITE WASTE

ORIGINAL REWRITTEN

DATE/REVISIONS:

1. Met① = As, Ba, Be, Cd, Cr, Cu
2. Pb, Ni, Se, Ag, V, Zn, Hg, ICRL6
3. Inor① = ICCL, ICFL, ICNO2,
4. ICNO3, ICPO4, ICSO4
5. OGCSC = ethanol & propanol
6. 9/15/99 → Run Matrix QC

RECRA LabNet Use Only

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

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

COC Record Present Upon Sample Rec't ✓ or N

Cooler Temp. 4.6 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: 4235 7952 9263 96043
Fed Ex 4235 7952 9274 Cooler SIZE 775 5.0
4235 7952 9322 91030 5.5

Relinquished by	Received by	Date	Time
Fed Ex	V. Hurney	9-11-99	0945

Relinquished by	Received by	Date	Time

ORIGINAL REWRITTEN

RECRA LabNet Use Only

9909C069

Custody Transfer Record/Lab Work Request

RECRA LabNet

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU HANFORD B99-078

Est. Final Proj. Sampling Date

Project #

Project Contact/Phone #

RECRA Project Manager

QC Del TAT

Date Rec'd Date Due

Account #

Refrigerator #																	
									6								
#/Type Container	Liquid																
	Solid								1G								
Volume	Liquid																
	Solid								500								
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		RECRA LabNet Use Only															
									Met								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
011	BOWN4			S	9-10-99	0830								✓						
012	9N5					0849														
013	9N6					0900														

Special Instructions:

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

RECRA LabNet Use Only

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

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N
Cooler Temp. 5° °C

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	9-11-99	0945

Relinquished by	Received by	Date	Time

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:
4235 7952 9322

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-117	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: 200 CW1, B8757	SAF No.: B99-078	
Ice Chest No.: ERC 96-043	Field Logbook No.: EL-1511	Method of Shipment: FED EX	
Shipped To: TMA/RECRA RECRA Labnet	Offsite Property No.: A990250	Bill of Lading/Air Bill No.: 4235 7952 9263	
		COA: B20 ~~CW1~~ CW1 9/10/99 C71C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	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	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	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										
1	B0WBJ2	Soil	9-9-99	0724			X	X	X	X	X		B0W	BCO
2	B0WBJ3	Soil	9-9-99	0738			X	X	X	X	X		B0W	BCO
3	B0WBJ4	Soil	9-9-99	0748			X	X	X	X	X		B0W	BCO
4	B0WBJ5	Soil	9-9-99	0806			X	X	X	X	X		B0W	BCO
	~~B0WBJ6~~	~~Soil~~ RINSATE												

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By	Brent Porter	9/9/99 11:00	Peter JB	9/9/99 11:00
Relinquished By	Peter JB	9/9/99 13:00	[illegible]	9/9/99 13:00
Relinquished By	[illegible]	9/10/99 1400	FEDEX [illegible]	9/10/99 1400
Relinquished By	[illegible]	9-11-99 0945	[illegible]	9-11-99 0945

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

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

1907C001

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-118	Page 1 of 2 9/9/99 RJN

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: 200 CW1, B8757	SAF No.: B99-078	
Ice Chest No.: SML 395	Field Logbook No.: EL-1511	Method of Shipment: FED EX	
Shipped To: TMA/RECRA RECRA Labnet	Offsite Property No.: A99 0250	Bill of Lading/Air Bill No.: 4235 7952 9274	
		COA: B20 CW1 671C	

POSSIBLE SAMPLE HAZARDS/REMARKS											
	Preservation	None	None	None	None	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	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	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										
5	B0WBJ8	Soil	9-9-99	0823						X	X	X	X	X
6	B0WBJ9	Soil	9-9-99	0845						X	X	X	X	X
	~~B0WBK0~~	~~Soil~~ 9/9/99 RJN												
	~~B0WBK1~~	~~Soil~~ 9/9/99 RJN												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 9/9/99 11:00	Received By: Refer 1B	Date/Time: 9/9/99 11:00
Relinquished By: Refer 1B	Date/Time: 9/9/99 1300	Received By: C Brice	Date/Time: 9/9/99 1300
Relinquished By: C Brice	Date/Time: 9/10/99 1400	Received By: FEDEX	Date/Time: 9/10/99 1400
Relinquished By: Fed Ex	Date/Time: 9-11-99 0945	Received By: [signature]	Date/Time: 9-11-99 0945

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

COLLECTOR UNAVAILABLE TO SIGN COC

TIE TO B0W8C0

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

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

9909-061

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-110	Page 1 of 3

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-7		SAF No.: B99-078
Ice Chest No.: ERC 96-030	Field Logbook No.: EL-1511		Method of Shipment: ~~gov vehicle~~ RJN 9/10/99 Fed. Ex
Shipped To: TMA/RECRA RECRA LabNet	Offsite Property No.: A990252		Bill of Lading/Air Bill No.: 423579529322
			COA: B20CL01671C

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	Cool 4C	None									
	Type of Container	aG	aG									
Special Handling and/or Storage	No. of Container(s)	1	1									
	Volume	500mL	1000mL									
SAMPLE ANALYSIS		See item (1) in Special Instructions	See item (2) in Special Instructions									

	Sample No.	Matrix *	Sample Date	Sample Time										
7	B0W9N0	Soil	9-10-99	0737	X									
8	B0W9N1	Soil	9-10-99	0749	X									
9	B0W9N2	Soil	9-10-99	0758	X									
10	B0W9N3	Soil	9-10-99	0805	X									
11	B0W9N4	Soil	9-10-99	0830	X									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By	Date/Time
Relinquished By: [signature]	R Nielson	9-10-99 1330	Fed Ex	
Relinquished By: Fed Ex		9-11-99 0945	Received By: [signature]	9-11-99 0945
Relinquished By		Date/Time	Received By	Date/Time
Relinquished By		Date/Time	Received By	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) Gamma Spec - Complete {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

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

9-109-C001

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-110	Page 2 of 3

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-7	SAF No.: B99-078	
Ice Chest No.: ERC96-030	Field Logbook No.: EL-1511	Method of Shipment: gov vehicle	
Shipped To: TMA/RECRA RECRA Labnet	Offsite Property No.: A990252	Bill of Lading/Air Bill No.: H23579529322	
		COA: B20CW167IC	

POSSIBLE SAMPLE HAZARDS/REMARKS												
	Preservation	Cool 4C	None									
	Type of Container	aG	aG									
Special Handling and/or Storage	No. of Container(s)	1	1									
	Volume	500mL	1000mL									
SAMPLE ANALYSIS		See item (1) in Special Instructions	See item (2) in Special Instructions									

	Sample No.	Matrix *	Sample Date	Sample Time										
12	B0W9N5	Soil	9-10-99	0849	X									
13	B0W9N6	Soil	9-10-99	0900	X									
	~~B0W9N7~~	~~Soil~~												
	~~B0W9N8~~	~~Soil~~												
	~~B0W9N9~~	~~Soil~~												

BN 9/10/99

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: [signature] / R. Nielson	Date/Time: 9-10-99 1330	Received By: Fed Ex.	Date/Time
Relinquished By: Fed Ex	Date/Time: 9-11-99 0945	Received By: [signature]	Date/Time: 9-11-99 0945
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	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) Gamma Spec - Complete {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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