H0525- TMA/RECRA

RECRA ENVIRONMENTAL INC.

0052712

Chemical and Environmental Measurement Information

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

Client : TNU-HANFORD B99-078
RFW# : 9909L051
SDG/SAF #: H0525/B99-078

W.O. #: 10985-001-001-9999-00
Date Received: 09-10-99

RECEIVED MAR 20 2000 EDMC

SEMIVOLATILE

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

The set of samples consisted of five (5) soil samples collected on 09-08-99.

The samples and their associated QC samples were extracted on 09-14-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Methods 3550B and 8270B TCL Semivolatile target compounds on 09-25-99.

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 temperature upon receipt has 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 these samples.
4. These samples were spectrally searched for Butylated Hydroxytoluene and Tributylphosphate; however, they were not identified in the samples.
5. All surrogate recoveries were within USEPA QC limits.
6. The blank spike and matrix spike recoveries were within USEPA QC limits.

4 FEB 2000

By 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 20 pages.

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

GLOSSARY OF BNA DATA

DATA QUALIFIERS

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

mmz\10-94\gloss.bna

GLOSSARY OF BNA DATA

ABBREVIATIONS

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

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Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 10/18/99 15:24

RFW Batch Number: **9909L051** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 1a

014

	Cust ID:	B0W9V0		B0W9V0		B0W9V0		B0W9V1		B0W9V2		B0W9V3	
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	75	%	72	%	77	%	70	%	77	%	76	%
	2-Fluorobiphenyl	70	%	64	%	63	%	65	%	66	%	65	%
	Terphenyl-d14	77	%	68	%	65	%	70	%	68	%	69	%
	Phenol-d5	64	%	52	%	56	%	56	%	59	%	61	%
	2-Fluorophenol	62	%	53	%	60	%	54	%	57	%	57	%
	2,4,6-Tribromophenol	53	%	64	%	62	%	67	%	69	%	66	%
Phenol		340	U	51	%	54	%	400	U	390	U	350	U
bis(2-Chloroethyl)ether		340	U	340	U	340	U	400	U	390	U	350	U
2-Chlorophenol		340	U	56	%	59	%	400	U	390	U	350	U
1,3-Dichlorobenzene		340	U	340	U	340	U	400	U	390	U	350	U
1,4-Dichlorobenzene		340	U	65	%	69	%	400	U	390	U	350	U
1,2-Dichlorobenzene		340	U	340	U	340	U	400	U	390	U	350	U
2-Methylphenol		340	U	340	U	340	U	400	U	390	U	350	U
2,2'-oxybis(1-Chloropropane)		340	U	340	U	340	U	400	U	390	U	350	U
4-Methylphenol		340	U	340	U	340	U	400	U	390	U	350	U
N-Nitroso-di-n-propylamine		340	U	87	%	96	%	400	U	390	U	350	U
Hexachloroethane		340	U	340	U	340	U	400	U	390	U	350	U
Nitrobenzene		340	U	340	U	340	U	400	U	390	U	350	U
Isophorone		340	U	340	U	340	U	400	U	390	U	350	U
2-Nitrophenol		340	U	340	U	340	U	400	U	390	U	350	U
2,4-Dimethylphenol		340	U	340	U	340	U	400	U	390	U	350	U
bis(2-Chloroethoxy)methane		340	U	340	U	340	U	400	U	390	U	350	U
2,4-Dichlorophenol		340	U	340	U	340	U	400	U	390	U	350	U
1,2,4-Trichlorobenzene		340	U	73	%	76	%	400	U	390	U	350	U
Naphthalene		340	U	340	U	340	U	400	U	390	U	350	U
4-Chloroaniline		340	U	340	U	340	U	400	U	390	U	350	U
Hexachlorobutadiene		340	U	340	U	340	U	400	U	390	U	350	U
4-Chloro-3-methylphenol		340	U	59	%	64	%	400	U	390	U	350	U
2-Methylnaphthalene		340	U	340	U	340	U	400	U	390	U	350	U
Hexachlorocyclopentadiene		340	U	340	U	340	U	400	U	390	U	350	U
2,4,6-Trichlorophenol		340	U	340	U	340	U	400	U	390	U	350	U
2,4,5-Trichlorophenol		850	U	850	U	850	U	990	U	960	U	880	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: 9909L051 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1b

Cust ID:	B0W9V0		B0W9V0		B0W9V0		B0W9V1		B0W9V2		B0W9V3	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	340	U	340	U	340	U	400	U	390	U	350	U
2-Nitroaniline	850	U	850	U	850	U	990	U	960	U	880	U
Dimethylphthalate	340	U	340	U	340	U	400	U	390	U	350	U
Acenaphthylene	340	U	340	U	340	U	400	U	390	U	350	U
2,6-Dinitrotoluene	340	U	340	U	340	U	400	U	390	U	350	U
3-Nitroaniline	850	U	850	U	850	U	990	U	960	U	880	U
Acenaphthene	340	U	69	%	65	%	400	U	390	U	350	U
2,4-Dinitrophenol	850	U	850	U	850	U	990	U	960	U	880	U
4-Nitrophenol	850	U	59	%	63	%	990	U	960	U	880	U
Dibenzofuran	340	U	340	U	340	U	400	U	390	U	350	U
2,4-Dinitrotoluene	340	U	72	%	74	%	400	U	390	U	350	U
Diethylphthalate	340	U	340	U	340	U	400	U	390	U	350	U
4-Chlorophenyl-phenylether	340	U	340	U	340	U	400	U	390	U	350	U
Fluorene	340	U	340	U	340	U	400	U	390	U	350	U
4-Nitroaniline	850	U	850	U	850	U	990	U	960	U	880	U
4,6-Dinitro-2-methylphenol	850	U	850	U	850	U	990	U	960	U	880	U
N-Nitrosodiphenylamine (1)	340	U	340	U	340	U	400	U	390	U	350	U
4-Bromophenyl-phenylether	340	U	340	U	340	U	400	U	390	U	350	U
Hexachlorobenzene	340	U	340	U	340	U	400	U	390	U	350	U
Pentachlorophenol	850	U	59	%	65	%	990	U	960	U	880	U
Phenanthrene	340	U	340	U	340	U	400	U	390	U	350	U
Anthracene	340	U	340	U	340	U	400	U	390	U	350	U
Carbazole	340	U	340	U	340	U	400	U	390	U	350	U
Di-n-butylphthalate	340	U	340	U	340	U	400	U	390	U	350	U
Fluoranthene	340	U	340	U	340	U	400	U	390	U	350	U
Pyrene	340	U	72	%	67	%	400	U	390	U	350	U
Butylbenzylphthalate	340	U	340	U	340	U	400	U	390	U	350	U
3,3'-Dichlorobenzidine	340	U	340	U	340	U	400	U	390	U	350	U
Benzo(a)anthracene	340	U	340	U	340	U	400	U	390	U	350	U
Chrysene	340	U	340	U	340	U	400	U	390	U	350	U
bis(2-Ethylhexyl)phthalate	340	U	340	U	340	U	400	U	390	U	350	U
Di-n-octyl phthalate	340	U	340	U	340	U	400	U	390	U	350	U
Benzo(b)fluoranthene	340	U	340	U	340	U	400	U	390	U	350	U
Benzo(k)fluoranthene	340	U	340	U	340	U	400	U	390	U	350	U
Benzo(a)pyrene	340	U	340	U	340	U	400	U	390	U	350	U
Indeno(1,2,3-cd)pyrene	340	U	340	U	340	U	400	U	390	U	350	U
Dibenz(a,h)anthracene	340	U	340	U	340	U	400	U	390	U	350	U
Benzo(g,h,i)perylene	340	U	340	U	340	U	400	U	390	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

Report Date: 10/18/99 15:24

RFW Batch Number: **9909L051** Client: **TNU-HANFORD B99-078** Work Order: 10985001001 Page: 2a

	Cust ID:	**B0W9R7**		**SBLKCV**		**SBLKCV BS**	
Sample Information	RFW#:	**010**		**99LE1121-MB1**		**99LE1121-MB1**	
	Matrix:	SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG	
Surrogate Recovery	Nitrobenzene-d5	74	%	86	%	86	%
	2-Fluorobiphenyl	68	%	72	%	73	%
	Terphenyl-d14	73	%	78	%	77	%
	Phenol-d5	60	%	62	%	66	%
	2-Fluorophenol	55	%	64	%	68	%
	2,4,6-Tribromophenol	63	%	71	%	77	%
Phenol		350	U	330	U	63	%
bis(2-Chloroethyl)ether		350	U	330	U	330	U
2-Chlorophenol		350	U	330	U	68	%
1,3-Dichlorobenzene		350	U	330	U	330	U
1,4-Dichlorobenzene		350	U	330	U	81	%
1,2-Dichlorobenzene		350	U	330	U	330	U
2-Methylphenol		350	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	330	U	330	U
4-Methylphenol		350	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	330	U	107	%
Hexachloroethane		350	U	330	U	330	U
Nitrobenzene		350	U	330	U	330	U
Isophorone		350	U	330	U	330	U
2-Nitrophenol		350	U	330	U	330	U
2,4-Dimethylphenol		350	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	330	U	330	U
2,4-Dichlorophenol		350	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	330	U	83	%
Naphthalene		350	U	330	U	330	U
4-Chloroaniline		350	U	330	U	330	U
Hexachlorobutadiene		350	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	330	U	68	%
2-Methylnaphthalene		350	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	330	U	330	U
2,4,5-Trichlorophenol		880	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	B0W9R7		SBLKCV		SBLKCV BS	
RFW#:	010		99LE1121-MB1		99LE1121-MB1	
2-Chloronaphthalene	350	U	330	U	330	U
2-Nitroaniline	880	U	840	U	840	U
Dimethylphthalate	350	U	330	U	330	U
Acenaphthylene	350	U	330	U	330	U
2,6-Dinitrotoluene	350	U	330	U	330	U
3-Nitroaniline	880	U	840	U	840	U
Acenaphthene	350	U	330	U	75	%
2,4-Dinitrophenol	880	U	840	U	840	U
4-Nitrophenol	880	U	840	U	75	%
Dibenzofuran	350	U	330	U	330	U
2,4-Dinitrotoluene	350	U	330	U	85	%
Diethylphthalate	350	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	330	U	330	U
Fluorene	350	U	330	U	330	U
4-Nitroaniline	880	U	840	U	840	U
4,6-Dinitro-2-methylphenol	880	U	840	U	840	U
N-Nitrosodiphenylamine (1)	350	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	330	U	330	U
Hexachlorobenzene	350	U	330	U	330	U
Pentachlorophenol	880	U	840	U	69	%
Phenanthrene	350	U	330	U	330	U
Anthracene	350	U	330	U	330	U
Carbazole	350	U	330	U	330	U
Di-n-butylphthalate	350	U	330	U	330	U
Fluoranthene	350	U	330	U	330	U
Pyrene	350	U	330	U	78	%
Butylbenzylphthalate	350	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	330	U	330	U
Benzo(a)anthracene	350	U	330	U	330	U
Chrysene	350	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	350	U	330	U	330	U
Di-n-octyl phthalate	350	U	330	U	330	U
Benzo(b)fluoranthene	350	U	330	U	330	U
Benzo(k)fluoranthene	350	U	330	U	330	U
Benzo(a)pyrene	350	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	330	U	330	U
Benzo(g,h,i)perylene	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.

B0W9V0

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L051-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D092514

Level: (low/med) LOW Date Received: 09/10/99

% Moisture: 2 decanted: (Y/N) __ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

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.	ALDOL CONDENSATE	9.22	100	JA
2.	HEXADECANOIC ACID	21.75	80	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W9V1

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L051-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A092507

Level: (low/med) LOW Date Received: 09/10/99

% Moisture: 16 decanted: (Y/N) __ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

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.	ALDOL CONDENSATE	8.02	100	JA
2.	HEXADECANOIC ACID	20.87	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W9V2

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L051-003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A092508

Level: (low/med) LOW Date Received: 09/10/99

% Moisture: 14 decanted: (Y/N) __ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

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	7.45	80	J
2.	ALDOL CONDENSATE	8.02	100	JA
3.	HEXADECANOIC ACID	20.87	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W9V3

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L051-004

Sample wt/vol: 30.1 (g/mL) G Lab File ID: A092509

Level: (low/med) LOW Date Received: 09/10/99

% Moisture: 6 decanted: (Y/N) __ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B0W9R7

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 9909L051-010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A092510

Level: (low/med) LOW Date Received: 09/10/99

% Moisture: 6 decanted: (Y/N)__ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

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.	ALDOL CONDENSATE	8.01	100	JA
2.	HEXADECANOIC ACID	20.87	90	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKCV

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-078

Matrix: (soil/water) SOIL Lab Sample ID: 99LE1121-MB1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: A092503

Level: (low/med) LOW Date Received: 09/14/99

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 09/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 09/25/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

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

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

DATE RECEIVED: 09/10/99 RFW LOT # :9909L051

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0W9V0	001	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9V0	001 MS	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9V0	001 MSD	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9V1	002	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9V2	003	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9V3	004	S	99LE1121	09/08/99	09/14/99	09/25/99
B0W9R7	010	S	99LE1121	09/08/99	09/14/99	09/25/99

LAB QC:

SBLKCV	MB1	S	99LE1121	N/A	09/14/99	09/25/99
SBLKCV	MB1 BS	S	99LE1121	N/A	09/14/99	09/25/99

RECRA LabNet Use Only

9909L051

Custody Transfer Record/Lab Work Request

Page 1 of 1

All

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

(8) gcms VOA BNA PCB Schnell perrone wet lab

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 9.10.99 Date Due 10/10/99

Account #

Refrigerator #		1	6	1					6		6	6				0
#/Type Container	Liquid															
	Solid	1g	1g	1					1g		1g	1g				
Volume	Liquid															
	Solid	250	500	1		W/VOA	W/BNA		500		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

RECRA LabNet Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	OPCB		OGCSC	ODRO		Met①		IPH	Inorg①				
001	BOW9V0			S	9/8/99	0739	X	X	X		X	X		X		X	X				
002	BOW9V1					0755															
003	BOW9V2					0806															
004	BOW9V3					0820															
005	BOW9M0				9/7/99	0840															
006	BOW9M2					0900															
007	BOW9M3					0924															
008	BOW9M4					0936															
009	BOW9M5					0944							X 9/15/99					X 9/15/99			
010	BOW9R7				9/8/99	1007															

Special Instructions:

Saf # B99-078

9/15/99 5-9 Logged for metals + ICRG only per Client coc

COMPOSITE WASTE

DATE/REVISIONS:

Met ① = As, Ba, Be, Cd, Cr, Cu, Pb, Ni,
2. Se, Ag, V, Zn, Hg, ICRG
Inorg ① = 1N3N2, 1CCL, 1CFL, 1CNO2, 1CNO3,
4. 1CPO4, 1CSO4, 1SFD, 1NH3N, 1CNTO
OGCSC = ethanol + ypropanol
6. Run Matrix QC

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. 2.4 °C

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	9/10/99	0945

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES:

*423579529182 / 3.8° 423579529171

9901C031

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-078-115	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, GP-10		SAF No.: B99-078
Ice Chest No.: ERC 96 013	Field Logbook No.: EL-1511		Method of Shipment: FED EX
Shipped To: ~~TMA/RECRA~~ RECRA Labnet	Offsite Property No.: A990247		Bill of Lading/Air Bill No.: 4235795 29182
			COA: B20CW1671C

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

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				
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										
1	B0W9V0	Soil	9/8/99	0739		X	X	X	X	X				B0W528
2	B0W9V1	Soil	9/8/99	0755		X	X	X	X	X				
3	B0W9V2	Soil	9/8/99	0806		X	X	X	X	X				
4	B0W9V3	Soil	9/8/99	0820		X	X	X	X	X				
	~~B0W9V4~~	~~Soil~~ RJN 9/8/99												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 9/8/99 12:20	Received By: Refer 1B	Date/Time: 9/8/99 12:20
Relinquished By: REF 1B	Date/Time: 9999 1300	Received By: SIGNATURE	Date/Time: 9999 1300
Relinquished By: SIGNATURE	Date/Time: 9999 1300	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 9/10/99 09:45	Received By: [signature]	Date/Time: 9/10/99 0945

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC.

(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

3.8° 2.4°

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	B99-078-109	Page 1 of 2 B20 9-7-99

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock — Telephone No.: 372-9574	Project Coordinator: TRENT, SJ	Price Code: 8N — Data Turnaround: 45 Days
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-1	SAF No.: B99-078	
Ice Chest No.: GWS 124	Field Logbook No.: EL-1511	Method of Shipment: ~~gov vehicle~~ FED EX	
Shipped To: TMA/RECRA B20 9-7-99	Offsite Property No.: A990247	Bill of Lading/Air Bill No.: 423579529171	
		COA: B20CW1 6716	

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

Sample No.	Matrix *	Sample Date	Sample Time										
5 B0W9M0	Soil	9-7-99	0840	X				B0W8D8					
~~B0W9M1~~	~~Soil~~	~~9-7-99~~	~~0852~~	X				B0W8D9					
~~B0W9M2~~	~~Soil~~	~~9-7-99~~	~~0900~~	X				B0W5M1					
~~B0W9M3~~	~~Soil~~	~~9-7-99~~	~~0924~~	X									
~~B0W9M4~~	~~Soil~~	~~9-7-99~~	~~0936~~	X									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Doug Bowers	Date/Time: 9-7-99/1600	Received By: Rex IB	Date/Time: 9-7-99/1600
Relinquished By: REF IB	Date/Time: 9999 1300	Received By: SJGALE	Date/Time: 7999 1300
Relinquished By: SJGALE	Date/Time: 7999 1300	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 9/10/99 0945	Received By: D. Smith	Date/Time: 9/10/99 0945

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC.

(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}

C.O.C. SAlet because of lt qnty. shipment, this a copy

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	B99-078-109	Page 1 of 2 B20 9-7-99

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-1		SAF No.: B99-078
Ice Chest No.: GWS 124	Field Logbook No.: EL-1511		Method of Shipment: ~~gov vehicle~~ FED EX
Shipped To: TMA/RECRA B20 9-7-99	Offsite Property No.: A990247		Bill of Lading/Air Bill No.: 4235 7952 9171
			COA: B20CW1 6716

Price Code: 8N

Data Turnaround: 45 Days

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									
	~~B0W9M0~~	~~Soil~~	~~9-7-99~~	~~0840~~	X		B20	9-7-99	B0W808				
	~~B0W9M1~~ DF 9999	~~Soil~~	~~9-7-99~~	~~0852~~	X				~~B0W809~~				
6	B0W9M2	Soil	9-7-99	0900	X				B0W5M1				
7	B0W9M3	Soil	9-7-99	0924	X								
8	B0W9M4	Soil	9-7-99	0936	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Doug Bowers	Date/Time: 9-7-99/1600	Received By: REF 1B	Date/Time: 9-7-99/1600
Relinquished By: REF 1B	Date/Time: 9999 1300	Received By: SJGALE	Date/Time: 9999 1300
Relinquished By: SJGALE	Date/Time: 9999 1300	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 9/10/99 0945	Received By: D. Smith	Date/Time: 9/10/99 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) Gamma Spec - Complete {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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	B99-078-109	Page 2 of 2 RJB 9-7-99

Collector: Bowers/Porter/Nielson	Company Contact: Chris Cearlock	Telephone No.: 372-9574	Project Coordinator: TRENT, SJ
Project Designation: 200 Area Source characterization - 200-CW-1 OU	Sampling Location: GP-1		SAF No.: B99-078
Ice Chest No.: GWS 124	Field Logbook No.: EL-1511		Method of Shipment: ~~gov vehicle~~ FED EX
Shipped To: TMA/RECRA RJB 9-7-99	Offsite Property No.: A990247		Bill of Lading/Air Bill No.: 42357952 9171
			COA: B20CW1 671C

Price Code: 8N

Data Turnaround: 45 Days

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

Sample No.	Matrix *	Sample Date	Sample Time										
B0W9M5	Soil	9-7-99	0944	X			17.5-18.5		B0W5M1				
B0W9M6	Soil												
B0W9M7	Soil												
B0W9M8 RJB 9-7-99	Soil												
B0W9M9	Soil												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Doug Bowers	Date/Time: Doug Bowers 9-7-99/1600	Received By: Ref 1B	Date/Time: 9-7-99/1600
Relinquished By: REF 1B	Date/Time: 9999 1300	Received By: SJGALE	Date/Time: 9999
Relinquished By: SJGALE	Date/Time: 9999 1300	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 9/10/99 0945	Received By: [signature]	Date/Time: 9/10/99/0945

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) Gamma Spec - Complete {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

COLLECTOR UNAVAILABLE TO SIGN COL.

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	B99-078-113	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	SAF No. B99-078	
Ice Chest No. GWS 124	Field Logbook No. EL-1511	Method of Shipment FED EX	
Shipped To TMA/RECRA RECRA labnet	Offsite Property No. A990247	Bill of Lading/Air Bill No. 4235795291 71	
		COA B20CW1671C	

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										
10 B0W9R7	Soil	9/8/99	1007		X	X	X	X	X				B0W528
~~B0W9R8~~	~~Soil~~												
~~B0W9R9~~	~~Soil~~	RJN 9/8/99											
~~B0W9T0~~	~~Soil~~												
~~B0W9T1~~	~~Soil~~												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By: Brent Porter	Date/Time: 9/8/99 12:20	Received By: Refer IB	Date/Time: 9/8/99 12:20
Relinquished By: REF IB	Date/Time: 9999 1300	Received By: SJGALE [signature]	Date/Time: 9999 1300
Relinquished By: SJGALE [signature]	Date/Time: 9999 1300	Received By: FED EX	Date/Time:
Relinquished By: Fed Ex	Date/Time: 9/10/99 0945	Received By: [signature]	Date/Time: 9/10/99 - 0945

SPECIAL INSTRUCTIONS

See chain of custody comments on SAF B99-078.

COLLECTOR UNAVAILABLE TO SIGN COC

(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