H0587-TMA/RECRA

0052647

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RECRA ENVIRONMENTAL INC.

Chemical and Environmental Measurement Information

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

Client : TNU-HANFORD B99-085
RFW # : 9910L473
SDG/SAF #: H0587/B99-085

W.O. #: 10985-001-001-9999-00
Date Received: 10-22-99

SEMIVOLATILE

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

One (1) water sample was collected on 10-20-99.

The sample and its associated QC samples were extracted on 10-26-99 and analyzed according to criteria set forth in Recra OPs based on SW 846 Method 8270B for TCL Semivolatile target compounds on 11-01-99.

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 the sample.
4. All surrogate recoveries were within EPA QC limits.
5. One (1) of twenty-two (22) matrix spike recoveries was outside EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The sample was spectrally searched for Butylated Hydroxytoluene and Tributylphosphate; however, they were not identified in the sample.

by J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

01-17-00
Date

som\gorup\data\bna\tnu10473.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

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

GLOSSARY OF BNA DATA

DATA QUALIFIERS

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

mmz\10-94\gloss.bna

GLOSSARY OF BNA DATA

ABBREVIATIONS

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

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Recra LabNet - Lionville Laboratory

Semivolatiles by GC/MS, HSL List

Report Date: 11/20/99 13:46

RFW Batch Number: **9910L473** Client: **TNU-HANFORD B99-085** Work Order: 10985001001 Page: 1a

	Cust ID:	B0WNW7		B0WNW7		B0WNW7		SBLKFG		SBLKFG BS	
Sample Information	RFW#:	002		002 MS		002 MSD		99LE1299-MB1		99LE1299-MB1	
	Matrix:	WATER		WATER		WATER		WATER		WATER	
	D.F.:	1.00		1.00		1.00		1.00		1.00	
	Units:	UG/L		UG/L		UG/L		UG/L		UG/L	
Surrogate Recovery	Nitrobenzene-d5	81	%	76	%	82	%	79	%	79	%
	2-Fluorobiphenyl	78	%	78	%	81	%	79	%	76	%
	Terphenyl-d14	82	%	80	%	84	%	84	%	79	%
	Phenol-d5	67	%	48	%	76	%	62	%	66	%
	2-Fluorophenol	79	%	73	%	79	%	79	%	79	%
	2,4,6-Tribromophenol	82	%	76	%	84	%	84	%	83	%
Phenol		11	U	54	%	74	%	10	U	67	%
bis(2-Chloroethyl)ether		11	U	22	U	22	U	10	U	10	U
2-Chlorophenol		11	U	67	%	82	%	10	U	76	%
1,3-Dichlorobenzene		11	U	22	U	22	U	10	U	10	U
1,4-Dichlorobenzene		11	U	49	%	62	%	10	U	46	%
1,2-Dichlorobenzene		11	U	22	U	22	U	10	U	10	U
2-Methylphenol		11	U	22	U	22	U	10	U	10	U
2,2'-oxybis(1-Chloropropane)		11	U	22	U	22	U	10	U	10	U
4-Methylphenol		11	U	22	U	22	U	10	U	10	U
N-Nitroso-di-n-propylamine		11	U	42	%	79	%	10	U	62	%
Hexachloroethane		11	U	22	U	22	U	10	U	10	U
Nitrobenzene		11	U	22	U	22	U	10	U	10	U
Isophorone		11	U	22	U	22	U	10	U	10	U
2-Nitrophenol		11	U	22	U	22	U	10	U	10	U
2,4-Dimethylphenol		11	U	22	U	22	U	10	U	10	U
bis(2-Chloroethoxy)methane		11	U	22	U	22	U	10	U	10	U
2,4-Dichlorophenol		11	U	22	U	22	U	10	U	10	U
1,2,4-Trichlorobenzene		11	U	64	%	71	%	10	U	59	%
Naphthalene		11	U	22	U	22	U	10	U	10	U
4-Chloroaniline		11	U	22	U	22	U	10	U	10	U
Hexachlorobutadiene		11	U	22	U	22	U	10	U	10	U
4-Chloro-3-methylphenol		11	U	62	%	69	%	10	U	66	%
2-Methylnaphthalene		11	U	22	U	22	U	10	U	10	U
Hexachlorocyclopentadiene		11	U	22	U	22	U	10	U	10	U
2,4,6-Trichlorophenol		11	U	22	U	22	U	10	U	10	U
2,4,5-Trichlorophenol		28	U	55	U	55	U	25	U	25	U

*= Outside of EPA CLP QC limits.

Cust ID:	B0WNW7		B0WNW7		B0WNW7		SBLKFG		SBLKFG BS	
RFW#:	002		002 MS		002 MSD		99LE1299-MB1		99LE1299-MB1	
2-Chloronaphthalene	11	U	22	U	22	U	10	U	10	U
2-Nitroaniline	28	U	55	U	55	U	25	U	25	U
Dimethylphthalate	11	U	22	U	22	U	10	U	10	U
Acenaphthylene	11	U	22	U	22	U	10	U	10	U
2,6-Dinitrotoluene	11	U	22	U	22	U	10	U	10	U
3-Nitroaniline	28	U	55	U	55	U	25	U	25	U
Acenaphthene	11	U	72	%	80	%	10	U	74	%
2,4-Dinitrophenol	28	U	55	U	55	U	25	U	25	U
4-Nitrophenol	28	U	68	%	86 *	%	25	U	74	%
Dibenzofuran	11	U	22	U	22	U	10	U	10	U
2,4-Dinitrotoluene	11	U	72	%	82	%	10	U	77	%
Diethylphthalate	11	U	22	U	22	U	10	U	10	U
4-Chlorophenyl-phenylether	11	U	22	U	22	U	10	U	10	U
Fluorene	11	U	22	U	22	U	10	U	10	U
4-Nitroaniline	28	U	55	U	55	U	25	U	25	U
4,6-Dinitro-2-methylphenol	28	U	55	U	55	U	25	U	25	U
N-Nitrosodiphenylamine (1)	11	U	22	U	22	U	10	U	10	U
4-Bromophenyl-phenylether	11	U	22	U	22	U	10	U	10	U
Hexachlorobenzene	11	U	22	U	22	U	10	U	10	U
Pentachlorophenol	28	U	75	%	75	%	25	U	89	%
Phenanthrene	11	U	22	U	22	U	10	U	10	U
Anthracene	11	U	22	U	22	U	10	U	10	U
Carbazole	11	U	22	U	22	U	10	U	10	U
Di-n-butylphthalate	11	U	22	U	22	U	10	U	10	U
Fluoranthene	11	U	22	U	22	U	10	U	10	U
Pyrene	11	U	77	%	83	%	10	U	80	%
Butylbenzylphthalate	11	U	22	U	22	U	10	U	10	U
3,3'-Dichlorobenzidine	11	U	22	U	22	U	10	U	10	U
Benzo(a)anthracene	11	U	22	U	22	U	10	U	10	U
Chrysene	11	U	22	U	22	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	11	U	22	U	22	U	10	U	10	U
Di-n-octyl phthalate	11	U	22	U	22	U	10	U	10	U
Benzo(b)fluoranthene	11	U	22	U	22	U	10	U	10	U
Benzo(k)fluoranthene	11	U	22	U	22	U	10	U	10	U
Benzo(a)pyrene	11	U	22	U	22	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	11	U	22	U	22	U	10	U	10	U
Dibenz(a,h)anthracene	11	U	22	U	22	U	10	U	10	U
Benzo(g,h,i)perylene	11	U	22	U	22	U	10	U	10	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.

B0WNW7

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-085

Matrix: (soil/water) WATER Lab Sample ID: 9910L473-002

Sample wt/vol: 900 (g/mL) ML Lab File ID: D110109

Level: (low/med) LOW Date Received: 10/22/99

% Moisture: _____ decanted: (Y/N)__ Date Extracted: 10/26/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/01/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.23	7	JB
2.	UNKNOWN	7.30	3	JB
3.	UNKNOWN	7.33	4	J
4.	UNKNOWN	8.03	7	JB
5.	UNKNOWN	8.09	4	JB
6.	UNKNOWN	8.29	3	JB
7.	UNKNOWN	8.55	7	J
8.	UNKNOWN	8.66	9	JB
9.	C3-ALKYLBENZENE	9.57	3	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKFG

Lab Name: Recra.LabNet Work Order: 10985001001

Client: TNU-HANFORD B99-085

Matrix: (soil/water) WATER Lab Sample ID: 99LE1299-MB1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: D110103

Level: (low/med) LOW Date Received: 10/26/99

% Moisture: _____ decanted: (Y/N) __ Date Extracted: 10/26/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 11/01/99

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.22	4	J
2.	UNKNOWN	7.29	3	J
3.	UNKNOWN	8.01	6	J
4.	UNKNOWN	8.07	2	J
5.	UNKNOWN	8.28	2	J
6.	UNKNOWN	8.52	2	J
7.	UNKNOWN	8.55	3	J
8.	UNKNOWN	8.64	9	J
9.	UNKNOWN	14.45	4	J
10.	UNKNOWN	27.44	2	J

Recra LabNet - Lionville Laboratory
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-085

DATE RECEIVED: 10/22/99 RFW LOT # :9910L473

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0WNW7	002	W	99LE1299	10/20/99	10/26/99	11/01/99
B0WNW7	002 MS	W	99LE1299	10/20/99	10/26/99	11/01/99
B0WNW7	002 MSD	W	99LE1299	10/20/99	10/26/99	11/01/99

LAB QC:

SBLKFG	MB1	W	99LE1299	N/A	10/26/99	11/01/99
SBLKFG	MB1 BS	W	99LE1299	N/A	10/26/99	11/01/99

RECRA LabNet Use Only
9910L473

Custody Transfer Record/Lab Work Request

Page 1 of 1

All FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU - Hanford B99-085
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: DJ
QC: spec Del: std TAT: 30 day
Date Rec'd: 10/22/99 Date Due: 11/21/99
Account #:

Refrigerator #		1	2				2				1					
#/Type Container	Liquid	3AG	2AG				1PL	1PL	3PL		1PL					
	Solid															
Volume	Liquid	40	1LT				500	1LT	500		1LT					
	Solid															
Preservatives		HCL	—				ZNAC NaOH	H2SO4 HNO3	HNO7		—					
ANALYSES REQUESTED		ORGANIC VOA	BNA	Pest/PCB	Herb		Sulfide	NO3 NO2 Ammon	INORG Metal	CN	IC Anions					
		RECRA LabNet Use Only														
		0624H 0GCSC	0625H				1SFD	1N3N2 1NH3N	Met ①		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	0624H 0GCSC	0625H				1SFD	1N3N2 1NH3N	Met ①		Ang ①					
001	BOWNW6			W	0455	10/20/99	3														
002	⊥ 7	X	X	⊥	⊥	⊥	3	2				1	1	3		1					

Special Instructions:

COMPOSITE WASTE

DATE/REVISIONS:
Met ① = As, Ba, Cd, Cr, Pb, Se, Ag, Cu,
2. Ni, V, Zn, Be
Ang ① 3. = ICCL, ICFL, ICNO2, ICNO3, ICPO4,
4. ICSO4, IPH
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't Y or N
Cooler Temp. 36 °C

Relinquished by	Received by	Date	Time
Fedex	Janson for VH	10/22/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES: 4235 7953 0900 ph out NO2/NO3/PO4 out

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-085-12	Page 1 of 1

Collector Bowers/Trice	Company Contact C Cearlock	Telephone No. 372-9574	Project Coordinator TRENT, SJ
Project Designation 200 Area Source characterization - 200-CW-1 OU - QC Sa	Sampling Location 200 East		SAF No. B99-085
Ice Chest No. ER 40	Field Logbook No. EL1511		Method of Shipment Fed EX
Shipped To ~~TMA/RECRA~~ 10/20/99 RECRA	Offsite Property No. A00003		Bill of Lading/Air Bill No.
			COA B20CW167IC

Price Code 7N

Data Turnaround 45 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	ZnAc+NaOH to pH >9 Cool	Cool 4C	H2SO4 to pH <2 Cool 4C	Cool 4C	HNO3 to pH <2	HCl to pH <2 Cool 4C	HNO3 to pH <2			
Type of Container	P	P	P	aG	P	aGs*	P			
No. of Container(s)	1	1	1	2	2	3	3			
Volume	500mL	1000mL	1000mL	1000mL	1000mL	40mL	500mL			
SAMPLE ANALYSIS	Sulfides - 9030	See item (1) in Special Instructions	NO2 NO3 - 353.1, Ammonia - 350.3	Semi-VOA - 8270A (TCL)	Gross Alpha Gross Beta	VOA - 8260A (TCL), VOA - 8260A (Add-On) (1-Propanol Ethanol)	See item (2) in Special Instructions			

Sample No.	Matrix *	Sample Date	Sample Time										
~~BOWNX0~~ CT 10/20/99 BOWNW6	Water	10/20/99	0455							X			
~~BOWNX1~~ CT 10/20/99 BOWNW7	Water	10/20/99	0455	X	X	X	X		X	X			

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Antonio Trice	10/20/99 1230	Ref 2C	10/20/99 1230
Ref 2C	10.20.99 / 0900	R. Thoren / Rikki Thoren	10.21.99 0900
R. Thoren / Rikki Thoren	10.21.99 / 1430	FED EX	
Fed Ex	10.22.99 0930	[illegible]	10.22.99 0930

SPECIAL INSTRUCTIONS

(1) IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); pH (Water) - 9040
(2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Copper, Nickel, Vanadium, Zinc)

NO TA required - from nonrad area

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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