NUS CORPORATION
A Halliburton Company

165058

FINAL DRAFT
SITE INSPECTION REPORT
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
VOLUME 1 OF 3

FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

02-9001-10-SI
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
VOLUME 1 OF 3

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9001-10
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 14, 1990

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

DEBORAH E. LAMOND
PROJECT MANAGER

MARIA COLER
SITE MANAGER

REVIEWED/APPROVED BY:

RONALD M. NAMAN
FIT OFFICE MANAGER

SITE INSPECTION REPORT: LEVEL III

PART I: SITE INFORMATION

1. Site Name/Alias Celotex (A)

   Street Market and Herbert Streets

   City Perth Amboy State New Jersey Zip 08861

2. County Middlesex County Code 23 Cong. Dist. 6

3 EPA ID No. NJD055930549

4. Block No. 88 Lot No. 1

5. Latitude 40° 30′ 40″ N Longitude 74° 17′ 15″ W

   USGS Quad. Perth Amboy, New Jersey

6. Owner Jim Walter Corporation Tel. No. (813) 873-4369

   Street 1500 North Dale Mabry

   City Tampa State Florida Zip 33631-3075

7. Operator The Celotex Corporation Tel. No. (201) 826-6881

   Street Market and Herbert Streets

   City Perth Amboy State N.J. Zip 08861

8. Type of Ownership

   ☒ Private ☐ Federal ☐ State
   ☐ County ☐ Municipal ☐ Unknown ☐ Other

9. Owner/Operator Notification on File

   ☐ RCRA 3001 Date ☒ CERCLA 103c Date June 4, 1981
   ☐ None ☐ Unknown

10. Permit Information

Permit	Permit No.	Date Issued	Expiration Date	Comments
NJPDES-DSW	NJ0050750	10-22-86	11-30-91	Discharge to Raritan River
NJPDES-POTW	NJ0023213			Discharge to STP

NJPDES-DGW	NJ0050750			Monitoring well permit
15 Air Permits	Unknown			Dust collectors, scrubbers, exhaust systems

11. Site Status

☒ Active ☐ Inactive ☐ Unknown

12. Years of Operation Approximately 1946 to Present

While production still takes place on site, the landfill has been closed since 1982.

13. Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.

(a) Waste Sources

Waste Unit No.	Waste Unit Type	Facility Name for Unit
1	Landfill	Inactive Landfill
2	Unlined Pit	Solid Waste Storage
3	Aboveground Drums	Waste oil, emulsion/water mix, boiler room chemicals

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

Repeated waste oil and fuel oil spills have occurred on site at the drum storage area, and near waste oil tanks on site. An abandoned tank car, the contents of which are unknown, is located on the west end of the site. A discharge pipe for stormwater runs beneath the landfill and discharges into the Raritan River. Drums and other debris have been noted in the drainage creek on the eastern boundary of the site. Ponded water with an oily sheen on the surface was noted adjacent to the site on the eastern boundary. A drum crushing operation, which has since been discontinued, once existed at the site.

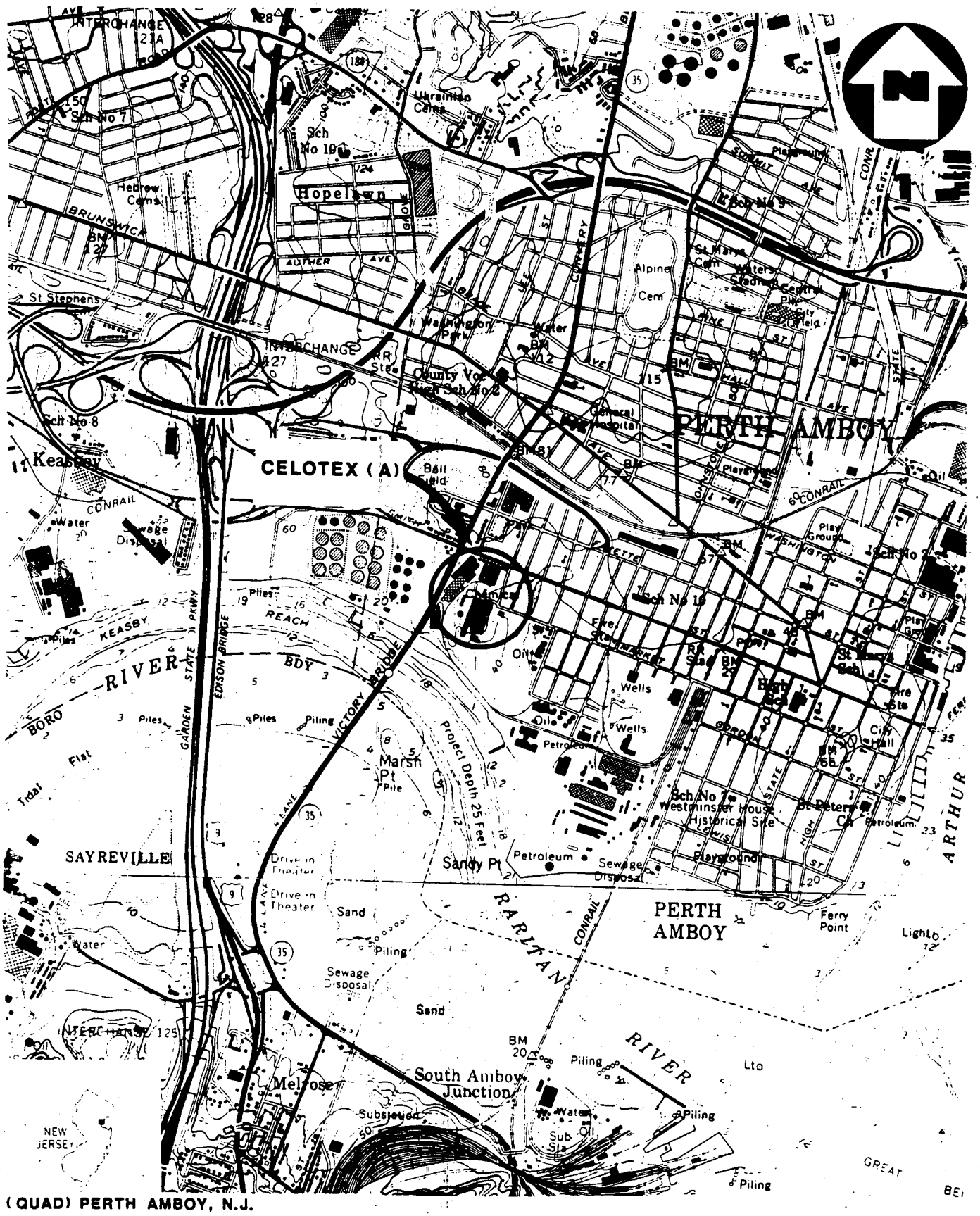
14. Information available from

Contact Amy Brochu Agency U.S. EPA Tel. No. (201) 906-6802

Preparer Bob Cantagallo Agency NUS Corp. Region 2 FIT Date 8/17/90

PART II: WASTE SOURCE INFORMATION

The Celotex Corporation is involved in the manufacturing of roofing products. A landfill, inactive since 1982, occupies 26 acres on the southeast corner of the Celotex property. The material landfilled there was produced on site and consisted primarily of asphalt, roofing shingles, roofing felt, and daily plant solid waste. Approximately 300 tons of bulky waste was landfilled monthly (Ref. No. 4, pp. 2, 5). The percentage of potentially hazardous substances is unknown, but asbestos, lead, ammonia, and iron were all detected at elevated levels in groundwater samples (Ref. No. 4, p. 2). Five monitoring wells have been installed around the landfill to comply with New Jersey Pollution Discharge Elimination System (NJPDES) permit requirements. The landfill is unlined, and apparently has not been properly capped and vented (Ref. No. 5). There are a number of drums stored on site containing unknown boiler room chemicals. Inspections conducted by NJDEP in the past have indicated that these drums may contain a wastewater/ emulsion mixture which is recycled for use in the manufacture of asphalt roofing (Ref. No. 12). These drums are in the process of being removed, as Celotex is attempting to eliminate on-site drum storage (Ref. Nos. 5; 6, p. 10). No spill control/prevention, curbing or collection system for the drum storage area was evident at the time of the NUS Site Inspection (Ref. No. 6). Solid production waste is stored in an unlined pit outside the processing unit, and is periodically removed by Perry County Recycling (Ref. Nos. 4, p. 2; 39). Figures 1 and 2 provide a site location map and site map, respectively.



(QUAD) PERTH AMBOY, N.J.

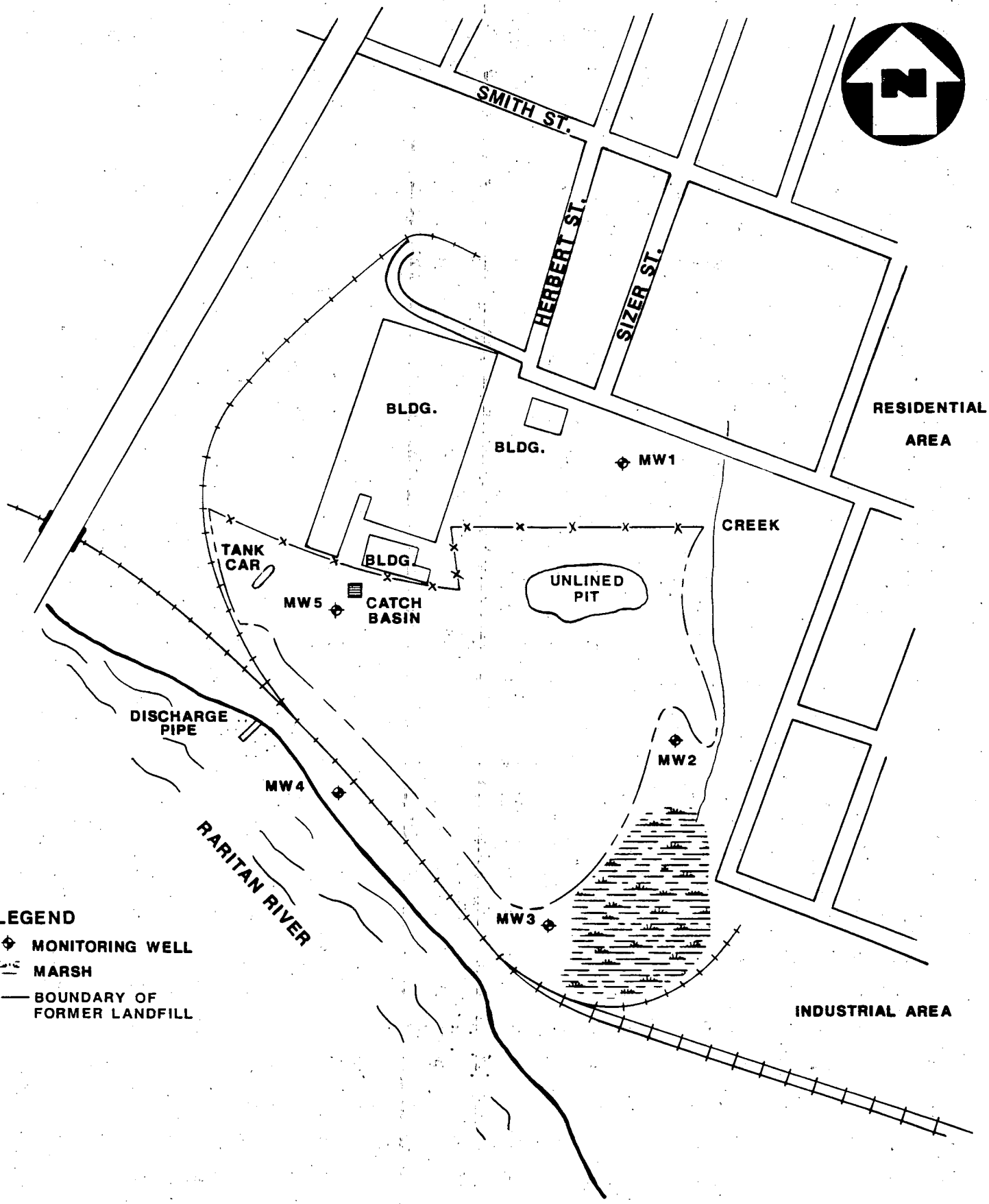
FIGURE 1

SITE LOCATION MAP

CELOTEX (A), PERTH AMBOY, N.J.

SCALE: 1" = 2000'

NUS CORPORATION



SITE MAP

CELOTEX (A), PERTH AMBOY, N.J.

NOT TO SCALE

FIGURE 2

NUS CORPORATION

PART III: PRE-EXISTENT ANALYTICAL DATA

Five monitoring wells are located around the perimeter of the landfill. Groundwater testing is done by Northeastern Analytical Corporation, but the QC procedures and analytical methods are unknown (Ref. No. 6, p. 10). Sampling takes place quarterly to comply with NJPDES permit regulations. Table 1 shows the parameters for which the samples are analyzed (Ref. No. 6, pp. 3, 4; 8, p. 6). Analysis is conducted either annually or quarterly for some analytes.

TABLE 1 - PARAMETERS FOR WHICH CELOTEX (A) GROUNDWATER SAMPLES ARE ANALYZED

Acrylonitrile	1,1-Dichloroethylene	Toluene
Ammonia Nitrogen*	1,2-Dichloroethylene	Total Dissolved Solids*
Arsenic	Ethylbenzene	Total Organic Carbon*
Asbestos*		
Barium	Fluoride	Total Volatile Organics
Benzene	Foaming Agents*	1,1,1-Trichloroethane
Biochemical Oxygen Demand*	Hardness	1,1,2-Trichloroethane
Bromoform	Iron*	Trichloroethylene
Cadmium	Lead*	Turbidity
Carbon Tetrachloride	Manganese	Vinyl Chloride
Chemical Oxygen Demand*	Mercury	Zinc*
Chloride*	Methylene Chloride	Acrolein
Chlorobenzene	Nitrate Nitrogen*	Chloroethane
Chlorodibromethane	Odor*	2-Chloroethylninylether
Chloroform	pH*	Dichlorobromomethane
Chromium	Phenols*	1,3-Dichloropropylene
Coliform Bacteria	Selenium	Methyl Bromide
Color*	Silver	Methyl Chloride
Copper*	Sodium*	1,2-Trans Dichloroethylene
Cyanide	Sulfate*	1,2-Dichlorobenzene
1,1-Dichloroethane	1,1,2,2-Tetrachloroethane	1,3-Dichlorobenzene
1,2-Dichloroethane	Tetrachloroethylene	1,4-Dichlorobenzene

* Parameters analyzed quarterly as opposed to annually.

The available data show elevated levels of asbestos in MW2 on June 19, 1989, and in MW3 on April 20, 1989 and January 10, 1990 (Ref. No. 8, pp. 3, 4). Acrylonitrile and acrolein were detected in all five monitoring wells on April 20, 1989 in levels too high to be accurately measured with the analysis method used. Other organics were detected, but at levels too low to be accurately measured (Ref. No. 8, p. 6).

PART IV: SITE INSPECTION SAMPLE RESULTS

NUS Corporation Region 2 FIT conducted sampling at the Celotex (A) Corporation site on April 26 and 27, 1990. A total of eighteen environmental samples were collected and included five groundwater (including one environmental duplicate), four surface water, six sediment (including one environmental duplicate) and three soil samples (Ref. No. 9, pp. 6-9). Tables II and III present a summary of the analytical data. Figure 3 provides a sample location map. Samples were analyzed under the Contract Laboratory Program (CLP) for Target Compound List (TCL) contaminants, excluding cyanide. In addition, the five groundwater samples were analyzed for asbestos. A complete presentation of the analytical results can be found in Reference 9. Due to laboratory error, the concentrations for a significant number of semivolatile fraction analytes, in the aqueous matrix only, were rejected and are unusable (Ref. No. 10).

Groundwater samples were collected from four of the five existing monitoring wells. Three well samples were downgradient and along the perimeter of the landfill (MW2, MW3, MW4), and the other was upgradient of the landfill and located off site (MW1). The groundwater samples were taken to characterize potential groundwater contamination attributable to the landfill. Four surface water and six sediment samples were collected. A sediment sample was collected at the catch basin, and a surface water and sediment sample were collected at the 001 outfall pipe. The purpose of this was to characterize the substances transported by the 001 discharge pipe and the integrity of the pipe itself, since it passes under the landfill before discharging to the Raritan River. Surface water and sediment samples were collected at three points along Sonman's Creek, which is located along the northeast border of the landfill. One sampling point was located upstream from potential sources of contamination (SW2/SED2), and two sampling points were located downstream from potential sources of contamination(SW3/SED3, SW4/SED4). The samples collected from the creek were intended to investigate the possibility of surface water contamination due to potential leachate migration from the landfill. Three soil samples were collected on the landfill. One was collected with an auger to characterize the landfilled material. Another sample was collected in a gully on the southern face of the landfill to document the migration potential from surface water runoff. The last sample was collected on a path on top of the landfill to document the potential for direct contact (Ref. Nos. 6, 9).

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

TABLE II

PESTICIDES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	4	4	2	1	1	1	1	1
Percent Moisture	45	43	7	4	9	--	--	--
alpha-BHC				R				
beta-BHC				R				
delta-BHC				R				
gamma-BHC (Lindane)				R				
Heptachlor				R				
Aldrin				R				
Heptachlor epoxide				R				
Endosulfan I				R				
Dieldrin				R				
4,4'-DDE				R				
Endrin				R				
Endosulfan II				R				
4,4'-DDD				R				
Endosulfan sulfate				R				
4,4'-DDT				R	J			
Methoxychlor				R				
Endrin ketone				R				
alpha-Chlordane				R				
gamma-Chlordane				R				
Toxaphene				R				
Aroclor-1016				R				
Aroclor-1221				R				
Aroclor-1232				R				
Aroclor-1242				R				
Aroclor-1248				R				
Aroclor-1254				R				
Aroclor-1260				R				

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

TABLE II
(cont'd)

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

PESTICIDES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	4	1
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
alpha-BHC											
beta-BHC											
delta-BHC											
gamma-BHC (Lindane)											
Heptachlor											
Aldrin											
Heptachlor epoxide											
Endosulfan I											
Dieldrin											
4,4'-DDE											
Endrin											
Endosulfan II											
4,4'-DDD											
Endosulfan sulfate											
4,4'-DDT											
Methoxychlor											
Endrin ketone											
alpha-Chlordane											
gamma-Chlordane											
Toxaphene											
Aroclor-1016											
Aroclor-1221											
Aroclor-1232											
Aroclor-1242											
Aroclor-1248											
Aroclor-1254											
Aroclor-1260											

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
M - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

TABLE II
(cont'd)

PESTICIDES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
alpha-BHC								NR
beta-BHC								NR
delta-BHC								NR
gamma-BHC (Lindane)								NR
Heptachlor								NR
Aldrin								NR
Heptachlor epoxide								NR
Endosulfan I								NR
Dieldrin								NR
4,4'-DDE								NR
Endrin								NR
Endosulfan II								NR
4,4'-DDD								NR
Endosulfan sulfate								NR
4,4'-DDT								NR
Methoxychlor								NR
Endrin ketone								NR
alpha-Chlordane								NR
gamma-Chlordane								NR
Toxaphene								NR
Aroclor-1016								NR
Aroclor-1221								NR
Aroclor-1232								NR
Aroclor-1242								NR
Aroclor-1248								NR
Aroclor-1254								NR
Aroclor-1260								NR

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

TABLE II
(cont'd)

INORGANICS Sample ID No. Traffic Report No. Matrix Units	NJDG-GW1 MBCQ75 WATER ug/L	NJDG-GW2 MBCQ76 WATER ug/L	NJDG-GW3 MBCQ77 WATER ug/L	NJDG-GW4 MBCQ78 WATER ug/L	NJDG-GW5(DUP) MBCQ79 WATER ug/L	NJDG-SW1 MBCQ80 WATER ug/L	NJDG-SW2 MBCQ81 WATER ug/L	NJDG-SW3(MS/MSD) MBCQ82 WATER ug/L	NJDG-SW4 MBCQ83 WATER ug/L	NJDG-SED1 MBCQ84 SEDIMENT mg/kg	NJDG-SED2 MBCQ85 SEDIMENT mg/kg
Aluminum	662 E	J	743 E	389 E	567 E	J	J	838 E	J	6570	7000
Antimony										J	J
Arsenic		J		J	J	J		J	J	15.4	9.5
Barium	J	J	J	270	J	607	J	J	J	150	196
Beryllium							J			J	
Cadmium											1.8
Calcium	127000	120000	42100	81500	131000	173000	98800 E	73100	117000	9670	7280
Chromium	J		J			J		J	J	45.8 E	37.7 E
Cobalt	J			J	J		J			J	J
Copper										123	328
Iron	20900	11000	5820	6040	20900	40600	2470 E	6080	1940	45100	29300
Lead								4.2 E	9	226 E	531 E
Magnesium	39600	81900	31700	20400	41500	64500	18700 E	15400	185000	3570	3740
Manganese	1890	1390	2290	11400	1940	1260	1270 E	1890	1550	429	647
Mercury										0.71	0.71
Nickel	J				J	J		J		29	34.3
Potassium	12200 E	16500 E	14900 E	J	12900 E	15600 E	7150 E	5160 E	56500 E	J	J
Selenium							6.8 E			J	J
Silver								11 E			J
Sodium	36300	87500	130000	43600	38100	67000	86300 E	56500	1480000	J	J
Thallium											
Vanadium	J	J	J	J	J	J			J	41.6	44.8
Zinc	J		31	J	23.1	37.3	66.3 E	36.8	39.8	425	781

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

TABLE II
(cont'd)

INORGANICS Sample ID No. Traffic Report No. Matrix Units	NJDG-SED3(MS/MSD) MBCQ86 SEDIMENT mg/kg	NJDG-SED4 MBCQ87 SEDIMENT mg/kg	NJDG-RIN1 MBCQ95 WATER ug/L	NJDG-RIN2 MBCQ96 WATER ug/L	NJDG-RIN3 MBCQ97 WATER ug/L	NJDG-RIN4 MBCQ98 WATER ug/L	NJDG-RIN5 MBCQ99 WATER ug/L	NJDG-TBLK1 N/A N/A ug/L	NJDG-SED5 MBCQ40 SEDIMENT mg/kg	NJDG-SED6(DUP) MBCQ39 SEDIMENT mg/kg	NJDG-S1 MBCQ88 SOIL mg/kg
Aluminum	6530	5000	J		J	J	J	NR	17100	17700	5940
Antimony	J	J						NR		J	
Arsenic	9.4	27.8 E						NR	16.5	19.8 E	2.3
Barium	165	105						NR	186	187	54.2
Beryllium	J	J		J				NR			J
Cadmium	J					J		NR			
Calcium	19300	3120	J	J			J	NR	20200	22900	2610
Chromium	66.2 E	37.7 E	J	J	J	J	J	NR	57.9 E	52.1 E	12.9 E
Cobalt	J	J						NR	J	18.3	J
Copper	364	318						NR	217	237	31.5
Iron	24700	25500	J	J	J	J	J	NR	33800	35100	11200
Lead	1480 E	214 E			26.8			NR	285 E	268 E	6.6 E
Magnesium	4330	2860	J				J	NR	9130	9300	2900
Manganese	362	211						NR	711	814	248
Mercury	0.65	0.44						NR	0.55	0.89	
Nickel	31.8	32.4						NR	66.7	63	13.2
Potassium	J	J						NR	1810	1940	J
Selenium	J	3.3 E						NR			
Silver								NR			
Sodium	J	2460	J	J	J	J	J	NR	J	J	J
Thallium								NR		J	
Vanadium	40.6	38.6						NR	109	86.9	18.9
Zinc	718	341			J		J	NR	544	515	52.5

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TDD#: 02-9001-1C
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

TABLE II (cont'd)

INORGANICS					
Sample ID No.	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	MBCQ89	MBCQ90	MBCP01	MBCP02	MBCP03
Matrix	SOIL	SOIL	WATER	WATER	WATER
Units	mg/kg	mg/kg	ug/L	ug/L	ug/L
Aluminum	3760	5660	J		
Antimony					
Arsenic	2.4	3.1			
Barium	61.2	66			
Beryllium	J	J	J	J	
Cadmium					
Calcium	J	1160			
Chromium	12.4 E	14.5 E	J	J	
Cobalt	J	J			
Copper	17.2	19.9	J		
Iron	12900	16600	J		J
Lead	12.2 E	53.7 E		J	
Magnesium	2400	2810		J	
Manganese	271	367			
Mercury					
Nickel	12.5	17.4			
Potassium	J	1060			
Selenium					
Silver			J		
Sodium	J	J			
Thallium					
Vanadium	15.1	21.3			
Zinc	43.9	69.6	20.4		

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TOD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

TABLE II
(cont'd)

VOLATILES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Chloromethane											
Bromomethane											
Vinyl Chloride											
Chloroethane											
Methylene Chloride									J		
Acetone											
Carbon Disulfide											
1,1-Dichloroethene											
1,1-Dichloroethane			J								
Trans-1,2-Dichloroethene (total)											
Chloroform											
1,2-Dichloroethane											
2-Butanone	R	R	R	R			R				
1,1,1-Trichloroethane										J	
Carbon Tetrachloride											
Vinyl Acetate											
Bromodichloromethane											
1,2-Dichloropropane											
cis-1,3-Dichloropropene											
Trichloroethene											
Dibromochloromethane											
1,1,2-Trichloroethane											
Benzene							J	J			
trans-1,3-Dichloropropene											
Bromoform											
4-Methyl-2-Pentanone							J				
2-Hexanone											
Tetrachloroethene											
Toluene											
1,1,2,2-Tetrachloroethane											
Chlorobenzene											
Ethylbenzene								J			
Styrene											
Xylenes (Total)								5			

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

TABLE II (cont'd)

VOLATILES								
Sample ID No.	WJDG-SED3(MS/MSD)	WJDG-SED4	WJDG-RIN1	WJDG-RIN2	WJDG-RIN3	WJDG-RIN4	WJDG-RIN5	WJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1
Percent Moisture	38	42	--	--	--	--	--	--
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane	44							
Methylene Chloride						J		
Acetone			B	B		B	B	B
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
Trans-1,2-Dichloroethene (total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone			B					
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene	J							
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-Pentanone								
2-Hexanone								
Tetrachloroethene								
Toluene			B				B	
1,1,2,2-Tetrachloroethane								
Chlorobenzene								
Ethylbenzene		J						
Styrene								
Xylenes (Total)		25						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

TABLE II (cont'd)

VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride								
Acetone	400 E	340 E					B	
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
Trans-1,2-Dichloroethene (total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone	92 E	62 E						
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene		J						
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-Pentanone		J						
2-Hexanone								
Tetrachloroethene								
Toluene	25 E	43 E						
1,1,2,2-Tetrachloroethane								
Chlorobenzene								
Ethylbenzene	21 E	12 E						
Styrene								
Xylenes (Total)	79 E	44 E						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

TABLE II
(cont'd)

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES											
Sample ID No.	WJDG-GW1	WJDG-GW2	WJDG-GW3	WJDG-GW4	WJDG-GW5(DUP)	WJDG-SW1	WJDG-SW2	WJDG-SW3(MS/MSD)	WJDG-SW4	WJDG-SED1	WJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1/Y	1/Y
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Phenol	R	R	R	R	R				R		
bis(2-Chloroethyl)ether		R									
2-Chlorophenol	R	R	R	R	R				R		
1,3-Dichlorobenzene		R									
1,4-Dichlorobenzene		R									
Benzyl alcohol		R									
1,2-Dichlorobenzene		R									
2-Methylphenol	R	R	R	R	R				R		
bis(2-Chloroisopropyl)ether		R									
4-Methylphenol	R	R	R	R	R				R		
N-Nitroso-di-n-dipropylamine		R									
Hexachloroethane		R									
Nitrobenzene		R									
Isophorone		R									
2-Nitrophenol	R	R	R	R	R				R		
2,4-Dimethylphenol	R	R	R	R	R				R		
Benzoic acid	R	R	R	R	R				R		
bis(2-Chloroethoxy)methane		R									
2,4-Dichlorophenol	R	R	R	R	R				R		
1,2,4-Trichlorobenzene		R									
Naphthalene		R								J	J
4-Chloroaniline	R	R	R	R	R						
Hexachlorobutadiene		R									
4-Chloro-3-Methylphenol	R	R	R	R	R				R		
2-Methylnaphthalene		J								J	J
Hexachlorocyclopentadiene		R									
2,4,6-Trichlorophenol	R	R	R	R	R				R		
2,4,5-Trichlorophenol	R	R	R	R	R				R		
2-Chloronaphthalene		R									
2-Nitroaniline		R									
Dimethylphthalate		R									
Acenaphthylene		R								J	J
2,6-Dinitrotoluene		R									
3-Nitroaniline		R									
Acenaphthene		10 E								J	J
2,4-Dinitrophenol	R	R	R	R	R				R		
4-Nitrophenol	R	R	R	R	R				R		
Dibenzofuran		J								J	
2,4-Dinitrotoluene		R									
Diethylphthalate		R					J				
4-Chlorophenyl-phenyl ether		R									
Fluorene		J								J	J
4-Nitroaniline		R									
4,6-Dinitro-2-methylphenol	R	R	R	R	R				R		
N-nitrosodiphenylamine		R									
4-Bromophenyl-phenyl ether		R									
Hexachlorobenzene		R									

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

TABLE II
(cont'd)

SEMI-VOLATILES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1/Y	1(MEO)	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
Phenol								NR
bis(2-Chloroethyl)ether								NR
2-Chlorophenol								NR
1,3-Dichlorobenzene								NR
1,4-Dichlorobenzene	J							NR
Benzyl alcohol								NR
1,2-Dichlorobenzene	J							NR
2-Methylphenol								NR
bis(2-Chloroisopropyl)ether								NR
4-Methylphenol	J							NR
N-Nitroso-di-n-dipropylamine								NR
Hexachloroethane								NR
Nitrobenzene								NR
Isophorone								NR
2-Nitrophenol								NR
2,4-Dimethylphenol								NR
Benzoic acid								NR
bis(2-Chloroethoxy)methane								NR
2,4-Dichlorophenol								NR
1,2,4-Trichlorobenzene								NR
Naphthalene	J							NR
4-Chloroaniline								NR
Hexachlorobutadiene								NR
4-Chloro-3-Methylphenol								NR
2-Methylnaphthalene	J							NR
Hexachlorocyclopentadiene								NR
2,4,6-Trichlorophenol								NR
2,4,5-Trichlorophenol								NR
2-Chloronaphthalene								NR
2-Nitroaniline								NR
Dimethylphthalate								NR
Acenaphthylene	1600							NR
2,6-Dinitrotoluene								NR
3-Nitroaniline								NR
Acenaphthene	J	J						NR
2,4-Dinitrophenol								NR
4-Nitrophenol								NR
Dibenzofuran	J	J						NR
2,4-Dinitrotoluene								NR
Diethylphthalate								NR
4-Chlorophenyl-phenyl ether								NR
Fluorene	J	J						NR
4-Nitroaniline								NR
4,6-Dinitro-2-methylphenol								NR
N-nitrosodiphenylamine								NR
4-Bromophenyl-phenyl ether								NR
Hexachlorobenzene								NR

TABLE II
(cont'd)

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1/Y	1/Y
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Pentachlorophenol	R	R	R	R	R				R		
Phenanthrene		J								3300	1900
Anthracene		R								1200	J
Di-n-butylphthalate		R								J	
Fluoranthene		R								7200	3700
Pyrene		R								3300	2200
Butylbenzylphthalate		R									2100
3,3'-Dichlorobenzidine		R									
Benzo(a)anthracene		R								3400	1800
Chrysene		R								4300	2200
bis(2-Ethylhexyl)phthalate		R					J				7300
Di-n-octylphthalate		R									J
Benzo(b)fluoranthene		R								5400 E	2600 E
Benzo(k)fluoranthene		R									
Benzo(a)pyrene		R								2900 E	1200 E
Indeno(1,2,3-cd)pyrene		R								1500 E	J
Dibenz(a,h)anthracene		R								J	
Benzo(g,h,i)perylene		R								1200 E	J

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

TABLE II
(cont'd)

SITE NAME: CELOTEX (A)
TOD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

SEMI-VOLATILES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1/Y	1(MED)	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
Pentachlorophenol								NR
Phenanthrene	5100	77000 E						NR
Anthracene	1500	J						NR
Di-n-butylphthalate		J						NR
Fluoranthene	10000	120000 E						NR
Pyrene	5500	74000 E						NR
Butylbenzylphthalate	3500							NR
3,3'-Dichlorobenzidine								NR
Benzo(a)anthracene	14000	46000 E						NR
Chrysene	5200	49000 E						NR
bis(2-Ethylhexyl)phthalate	10000							NR
Di-n-octylphthalate	J							NR
Benzo(b)fluoranthene	7200 E	J						NR
Benzo(k)fluoranthene	8200 E	39000 E						NR
Benzo(a)pyrene	4200 E	36000 E						NR
Indeno(1,2,3-cd)pyrene	2600 E	J						NR
Dibenz(a,h)anthracene	J							NR
Benzo(g,h,i)perylene	2200 E	J						NR

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

TABLE II
(cont'd)

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	10/Y	1/Y	1/Y	1/Y	1/Y	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Pentachlorophenol								
Phenanthrene	J	6000	J					
Anthracene	J	2200						
Di-n-butylphthalate								
Fluoranthene	25000	11000	J		J			
Pyrene	17000	7600	J		J			
Butylbenzylphthalate	J		J					
3,3'-Dichlorobenzidine								
Benzo(a)anthracene		4300	J		J			
Chrysene		5400	J		J			
bis(2-Ethylhexyl)phthalate	J		J	J				
Di-n-octylphthalate			J					
Benzo(b)fluoranthene	14000	11000	J		J			
Benzo(k)fluoranthene	J							
Benzo(a)pyrene	13000	3800						
Indeno(1,2,3-cd)pyrene	12000	2800						
Dibenz(a,h)anthracene	J							
Benzo(g,h,i)perylene	J	2200						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

TABLE II
(cont'd)

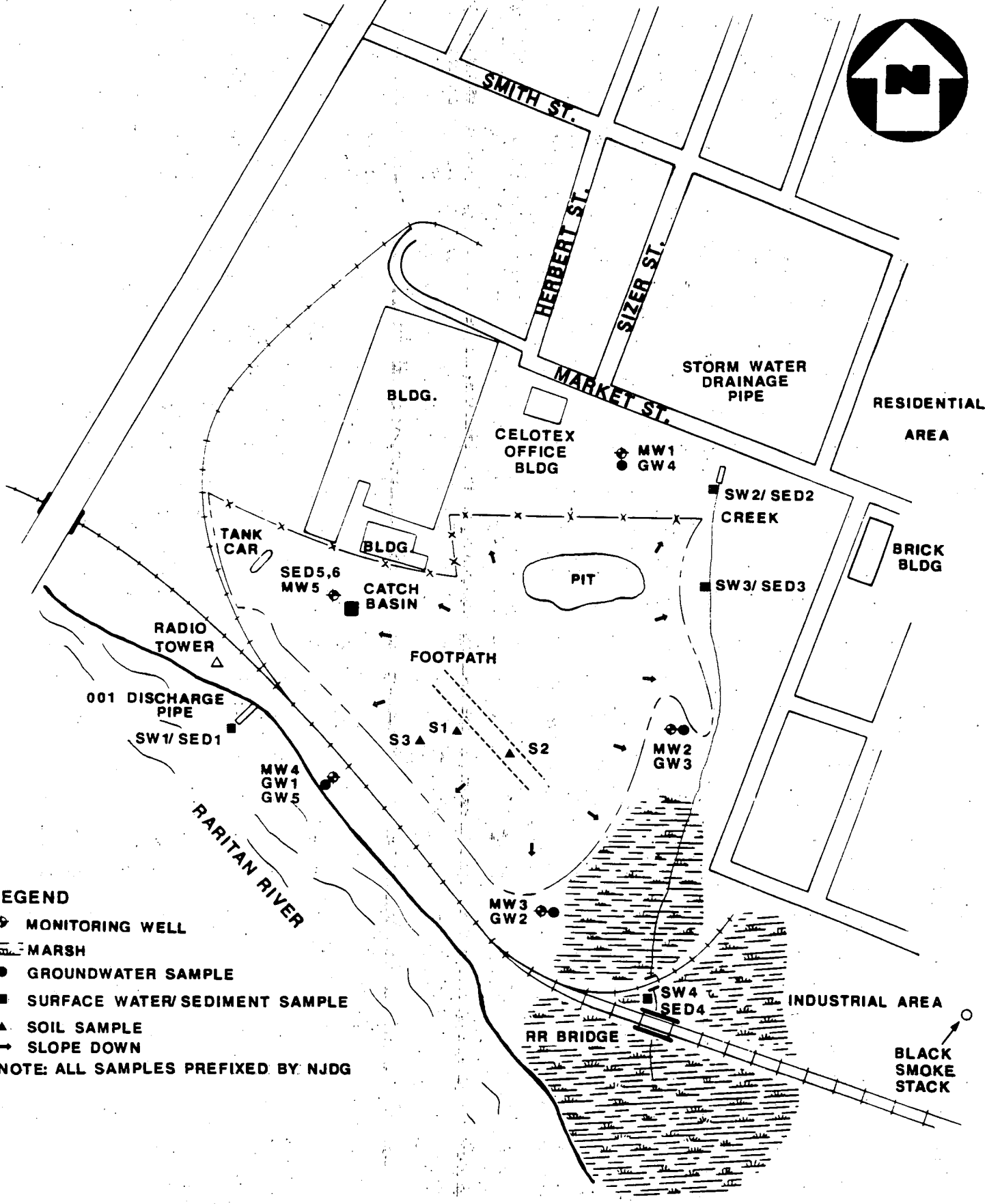
SITE NAME: CELOTEX (A)
IDOH: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	10/Y	1/Y	1/Y	1/Y	1/Y	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Phenol								
bis(2-Chloroethyl)ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl alcohol								
1,2-Dichlorobenzene								
2-Methylphenol								
bis(2-Chloroisopropyl)ether								
4-Methylphenol	J							
N-Nitroso-di-n-dipropylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
Benzoic acid								
bis(2-Chloroethoxy)methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene								
Naphthalene	J	3900						
4-Chloroaniline				R	R	R	R	R
Hexachlorobutadiene								
4-Chloro-3-Methylphenol								
2-Methylnaphthalene		J						
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylphthalate								
Acenaphthylene	J	J						
2,6-Dinitrotoluene								
3-Nitroaniline								
Acenaphthene		J						
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran		1200						
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenyl ether								
Fluorene	J	1700						
4-Nitroaniline								
4,6-Dinitro-2-methylphenol								
N-nitrosodiphenylamine								
4-Bromophenyl-phenyl ether								
Hexachlorobenzene								

TABLE III: SUMMARY OF THE RESULTS OF THE ANALYSES FOR ASBESTOS IN GROUNDWATER SAMPLES AT CELOTEX(A)

Sample Number	Monitoring Well Number	Total Structure Concentration (millions of structures/liter)	Type of Asbestos
SAS GW-1	MW-4	<1.6	None Detected
SAS GW-2	MW-3	23.8	Chrysotile
SAS GW-3	MW-2	<4.0	Chrysotile
SAS GW-4	MW-1	7.9	Chrysotile
SAS GW-5	MW-4	<4.0	Chrysotile

Ref. No. 9



SAMPLE LOCATION MAP

CELOTEX (A), PERTH AMBOY, N.J.

NOT TO SCALE

FIGURE 3

NUS CORPORATION

PART V: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

A release of asbestos to groundwater has been documented both in previous NJPDES compliance sampling and NUS FIT 2 sampling results (Ref. Nos. 8, pp. 3, 4, 9). The groundwater samples taken by NUS from MW-3 show asbestos levels that exceed the proposed maximum contaminant levels (PMCLs) of 7 mill. fibers/liter, and are more than 3 times as high as asbestos levels found in the upgradient well, as shown in Table III. (Ref. Nos. 10,11). Roofing shingles were previously manufactured at the facility and landfill deposition is documented (Ref. Nos. 4, pp. 2, 7; 12, p.5). Solid waste (shingles, asbestos, roofing materials) stored temporarily in a pit on site may have contributed to groundwater contamination (Ref. No. 4, p. 2). In addition, drums stored on site are suspected of containing a wastewater/emulsion mixture (Ref. No. 10). Since this"mixture" has never been definitively characterized, its hazardous nature, if any, has not been determined. Several NJDEP inspection reports indicate that some of the drums were observed to be leaking at the time of the inspections (Ref. No. 13). The drum storage area is unlined and the potential exists for leaking and/or spilled material to infiltrate to groundwater. A number of volatile and semivolatile organic compounds were detected in the catch basin sample (NJDG-SED5) at concentrations above those detected in the upstream sediment sample, thereby also presenting a potential for these contaminants to infiltrate to the groundwater (Ref. No. 9). The groundwater beneath the site lies in a layer of alluvium which is hydraulically connected to the Old Bridge Aquifer. The potential exists for contaminants to migrate to the Old Bridge Aquifer.

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

The major source of groundwater in this region is the Potomac-Raritan-Magothy Aquifer system. The Old Bridge Aquifer, a member of this system, is the aquifer of concern (Ref. No. 14, pp. 5, 6). This formation outcrops just south of the Raritan River and slopes downward in a southerly direction into Monmouth County, to a depth of 800 feet. The formation ranges in thickness from 20 to 110 feet. It consists mostly of fine- to coarse-grained light colored sand, with some clay deposits present. The permeability of this formation is 10^{-3} to 10^{-5} cm/sec (Ref. Nos. 17, p. 5; 15, p. 4; 16, p.4). Overlying the Old Bridge formation is a confining unit of the Merchantville Clay member and Woodbury Clay member, which ranges in thickness from a feather edge to 300 feet thick (Ref. No. 15, p. 3). This black micaceous clay has a permeability of less than 10^{-7} cm/sec. The confining layers below the Old Bridge Aquifer are the South Amboy Fire Clay and the Woodbridge Clay, which have permeabilities from 10^{-5} to 10^{-7} cm/sec (Ref. Nos.15, p. 16; 16, p. 4).

The water table below the site lies in a layer of alluvium composed of sand, gravel, and silt (Ref. No. 15, p. 3). This alluvium lies below the Raritan River and on either side of it (Ref. No. 18). The alluvium below the site is hydraulically connected to the Old Bridge Aquifer. This can be attributed to general groundwater flow in the region to the southeast, the fact that the Old Bridge Aquifer recharges from the area of the Raritan River, and the presence of the Woodbridge Clay member below the Old Bridge Aquifer (Ref. Nos. 14, 15, 17, 18).

3. **Is a designated sole source aquifer within 3 miles of the site?**

The Old Bridge Aquifer is part of the New Jersey Coastal Plain Aquifer, which lies within 3 miles of the site and has been designated a sole source aquifer.

Ref. No. 19, pp. 1, 3

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

   Asbestos has been detected in the groundwater on site; therefore, the wastes deposited on site have contacted the groundwater in the alluvium beneath the site, making the depth zero.

   Ref. Nos. 4, p. 2; 9

5. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the aquifer of concern?**

   The alluvium directly beneath the site is hydraulically connected to the Old Bridge Aquifer. It has a permeability of 10^{-7} cm/sec.

   Ref. Nos. 15; 16, p. 4; 17; 18

6. **What is the net precipitation for the area?**

   The net annual precipitation for the area is approximately 12 inches.

   Ref. No. 16, pp. 1, 2

7. **Identify uses of groundwater within 3 miles of the site (i.e., private drinking source, municipal source, commercial, industrial, irrigation, unusable).**

   There are public supply wells and wells for industrial use within 3 miles of the site. Private wells also exist within 3 miles of the site, but a municipal water supply serves the homes with these wells, and the uses of these wells are unknown.

   Ref. Nos. 20, pp. 1, 2; 21; 22

8. **What is the distance to and depth of the nearest well that is currently used for drinking or irrigation purposes?**

   The closest well is approximately 0.75 mile south of the site and is 133 feet deep. This well is not in use at this time. The closest well used for drinking purposes is a municipal well approximately 2.5 miles south of the site, across the Raritan River. The well is 48 feet deep.

   Ref. Nos. 20, pp. 2, 3; 21; 22

9. **Identify the population served by the aquifer of concern within a 3-mile radius of the site.**

   There are two public supply wells located within 3 miles of the site. Both wells are owned by the South Amboy Water Department, and serve approximately 8,500 people. The wells tap the Old Bridge Aquifer at a depth of 48 feet, and are located approximately 2.5 miles south of the site, across the Raritan River.

   Ref. Nos. 21, 22, 23, 24

SURFACE WATER ROUTE

10. Describe the likelihood of a release of contaminant(s) to surface water as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminants to the facility.

Sampling conducted by NUS Corp. Region 2 FIT on April 26 and 27, 1990 gives evidence of a documented release. Surface water and sediment samples were collected from a drainage creek which flows along the eastern boundary of the landfill (Figure 3). Levels of polyaromatic hydrocarbons (PAHs) were found in the downstream drainage creek sediment samples (SED3, SED4) which, in some cases, were 3 times as high as the upstream levels (SED2) (Ref. No. 9). These PAHs can be traced to petroleum-based products, and are attributable to the site due to the on-site production of roofing materials, specifically asphalt shingles (Ref. No. 4, p. 1). The drainage creek empties into a marshy area on the north bank of the Raritan River. (Figure 3). The potential for contamination of the Raritan River increases when the marshy area in question becomes inundated at high tide. Two volatile compounds were detected in downstream sediment samples (SED3, SED4) and not in the upstream sample (SED2) (Ref. No. 9).

11. Identify and locate the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.

The nearest downslope surface water to the site is the Raritan River, 100-200 feet south of the southern base of the landfill. Site drainage patterns indicate surface runoff flows to the south and east of the site, into a drainage creek and eventually to the Raritan River. Surface runoff may also flow directly into the Raritan River from the south face of the landfill. Railroad tracks adjacent to the southern slope of the landfill are not elevated and would not provide a barrier to surface water flow.

Ref. Nos. 6, 22

12. What is the facility slope in percent? (Facility slope is measured from the highest point of deposited hazardous waste to the most downhill point of the waste area or to where contamination is detected.)

The slope of the facility is 20 percent, sloping to the southeast.

Ref. No. 22

13. What is the slope of the intervening terrain in percent? (Intervening terrain slope is measured from the most downhill point of the waste area to the probable point of entry to surface water.)

The slope of the intervening terrain, from the base of the landfill to the Raritan River, is 2.5 percent. The drainage creek is located directly at the base of the eastern face of the landfill. The slope from the highest point on the landfill to the drainage creek is 20 percent.

Ref. No. 22

14. What is the 1-year 24-hour rainfall?

The 1-year 24-hour rainfall for this area is approximately 2.5 to 3 inches.

Ref. No. 16, p. 3

15. What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.

The site is 100 to 200 feet from the north bank of the Raritan River, which is south of the landfill.

Ref. No. 22

16. Identify uses of surface waters within 3 miles downstream of the site (i.e., drinking, irrigation, recreation, commercial, industrial, not used).

The Raritan River and Raritan Bay are used for fishing and recreation. A limited amount of commercial fishing/shell fishing takes place here also.

Ref. Nos. 4, p. 4; 25

17. Describe any wetlands, greater than 5 acres in area, within 2 miles downstream of the site. Include whether it is a freshwater or coastal wetland.

Coastal wetlands more than 5 acres in size are located along the Raritan River and Raritan Bay immediately adjacent to the site and across the river.

Ref. Nos. 22, 26

18. Describe any critical habitats of federally listed endangered species within 2 miles of the site along the migration path.

There are no critical habitats of federally listed endangered species located within 2 miles of the site.

Ref. No. 27

19. What is the distance to the nearest sensitive environment along or contiguous to the migration path (if any exist within 2 miles)?

Coastal wetlands are located within 0.5 mile of the site.

Ref. Nos. 22, 26

20. Identify the population served or acres of food crops irrigated by surface water intakes within 3 miles downstream of the site and the distance to the intake(s).

There are no surface water intakes within 3 miles of the site.

Ref. Nos. 22, 24

21. What is the state water quality classification of the water body of concern?

The Raritan River to Raritan Bay is classified as an SE1 water body. Uses of SE1 waters are shellfish harvesting; primary and secondary contact recreation; and the maintenance, migration, and propagation of established biota.

Ref. No. 28

22. Describe any apparent biota contamination that is attributable to the site.

No apparent biota contamination was noted on site.

Ref. No. 6

AIR ROUTE

23. Describe the likelihood of a release of contaminant(s) to the air as follows: observed, alleged, potential, none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.

Asbestos was released into the air in the past as a result of production, but the landfill itself was not the source of air contamination. There was a complaint of asbestos blowing from the landfill, but the validity of the complaint was not established. The landfill is unevenly covered, and landfilled material is exposed in several places. The cover is deep enough in some places so that vegetation is present, but closure cover requirements have not been met.

Ref. Nos. 2; 5; 6; 28, p. 2;29

24. What is the population within a 4-mile radius of the site?

There are approximately 142,200 people living within a 4-mile radius of the site.

Ref. No. 30

FIRE AND EXPLOSION

25. Describe the potential for a fire or explosion to occur with respect to the hazardous substance(s) known or suspected to be present on site. Identify the hazardous substance(s) and the method of storage or containment associated with each.

Two brush fires are known to have occurred on the landfill in March or April of 1990. It is also known that youths ride mopeds or dirtbikes on the landfill, and it is probable that these youths are responsible for the fires which occurred (Ref. No. 5, pp. 5,6). There seems to be little or no potential for the materials in the landfill to cause a fire.

Ref. No. 1, p. 6

26. What is the population within a 2-mile radius of the hazardous substance(s) at the facility?

There are approximately 54,100 people living within a 2-mile radius of the site.

Ref. No. 30

DIRECT CONTACT/ON-SITE EXPOSURE

27. Describe the potential for direct contact with hazardous substance(s) stored in any of the waste units on site or deposited in on-site soils. Identify the hazardous substance(s) and the accessibility of the waste unit.

While no contamination of the soil was documented, there is a potential for direct contact with exposed materials in the landfill (asbestos, roofing materials, asphalt). Celotex was cited for inadequate cover of the landfill in 1977 and 1982 (Ref. No. 31). Workers at the production facility have access to the landfill (Ref. No. 32, p. 6). There are areas around the site where fencing does not exist, allowing entrance to the site (Ref. No. 6, p. 8). It is known that young people have ridden mopeds or dirtbikes on top of the landfill as evidenced by a trail on top of the landfill (Ref. No. 6). The approximate location of the trail is given in Figure 3.

Ref. No.

28. How many residents live on a property whose boundaries encompass any part of an area contaminated by the site?

There is an apartment building located adjacent to the site, but no documentation of contamination of that area exists.

Ref. Nos. 8, 21

29. What is the population within a 1-mile radius of the site?

There are approximately 20,600 people living within a 1-mile radius of the site.

Ref. No. 30

PART VI: ACTUAL HAZARDOUS CONDITIONS

NUS Corp. Region 2 FIT sampling results and previous NJPDES compliance sampling provide documentation of a release of asbestos to groundwater (Ref. Nos. 8, pp. 3, 4; 9). Groundwater samples taken by NUS from MW-3 show asbestos levels significantly exceeding PMCLS (Ref. Nos. 9, 10, 11). The asbestos in the groundwater can be attributed to the facility on the basis of the use of asbestos in roofing material production and documented landfill deposition (Ref. Nos. 4, pp. 2, 7; 12, p. 5). Drums stored on site are suspected to contain a wastewater/emulsion mixture, but this "mixture" has not been characterized, and its hazardous nature, if any, is unknown (Ref. No. 10). In addition, several leaking drums have been found during site inspections, and the drum storage area is unlined, creating the potential for spilled or leaking material to infiltrate to groundwater. A number of volatile and semivolatile organic compounds were detected in the catch basin (NJDG-SED5) at concentrations above those detected in the upstream sediment sample, presenting the potential for these contaminants to infiltrate to groundwater (Ref. No. 9). Also, any contaminants present in the catch basin could potentially reach the Raritan River during periods of stormwater overflow.

Sampling conducted by NUS Corp. Region 2 FIT on April 26 and 27, 1990 also gives evidence of a documented release to surface water. Levels of PAHs exceeding upstream levels were found in the drainage creek along the eastern boundary of the site (Ref. No. 9). The PAHs can be traced to petroleum-based products, such as were used in the on-site production of roofing materials, particularly asphalt shingles (Ref. Nos. 4, 34). This drainage creek empties into a marshy area on the north bank of the Raritan River, so the potential exists for these contaminants to migrate to the Raritan River, particularly at high tide. Zinc was detected in a downstream sediment sample at a concentration greater than that detected in the upstream sample (Ref. No. 9). Two volatile organic compounds were detected in downstream sediment samples, and not in the upstream sample (Ref. No. 9).

No other actual hazardous conditions pertaining to human or environmental contamination have been documented. Specifically:

- Contamination has not been documented either in organisms in a food chain leading to humans, or in organisms directly consumed by humans.
- There has not been a documented observed incident of direct physical contact with hazardous substances at the facility involving a human being (not including occupational exposure) or a domestic animal.

- There have been no documented incidents of damage to flora (e.g., stressed vegetation) or to fauna (e.g. fish kill) that can be attributed to the hazardous material at the facility.
- Analysis of soil samples does not show above-background contamination that is attributable to the facility.
- A fire marshall has not indicated that the facility presents a significant threat, and there is not a demonstrated threat of fire or explosion based on field observation.
- There is no documented contamination of a sewer or storm drain.

PART VII: SITE SUMMARY AND RECOMMENDATIONS

The Celotex (A) site is located at the northwest corner of Herbert and Market Streets, in Perth Amboy, Middlesex County, New Jersey. The Celotex Corporation, a subsidiary of Jim Walter Corporation, owns the site, and carries out the production of roofing materials on 4 acres in the northwest corner of the site. United Lead Company was the previous owner of the site. A landfill occupies 26 acres on the south of the property, approximately 100 to 200 feet from the north bank of the Raritan River (Ref. Nos. 4, 22). The property itself borders the Raritan River.

The landfill was active from approximately 1946 to 1982, during which time roofing shingles, asphalt, roofing felt, and solid waste from daily plant operations were deposited. A paper mill and organic asphalt operation located on site was closed in 1985 (Ref. No. 33). Three hundred tons of solid waste was landfilled monthly, but the amount of hazardous waste present in the landfill is unknown. The landfill is elevated 25-35 feet compared to the surrounding topography (Ref. No. 33).

Celotex holds a NJPDES permit (NJ0050750) to discharge into the Raritan River. The 001 discharge consists of a stormwater pipe running beneath the landfill and discharging into the Raritan River. The 002 discharge consists of boiler blowdown water, water softener, and stormwater from collection pits. This water is mostly recycled, and any overflow is discharged to the river (Ref. Nos. 35, 36). Celotex maintains five monitoring wells which are regulated by the New Jersey Department of Environmental Protection (Ref. No. 7). Celotex also holds a permit to discharge to a sewage treatment plant (STP), specifically the Perth Amboy Sewage Treatment Plant (NJ0023213). (Ref. No. 37) This 003 discharge consists of industrial wastewater which has undergone screening and clarification to remove fibers and solids (Ref. No. 37). In March 1987, a NJPDES inspection found unnacceptable 003 discharge conditions due to stormwater intrusions into the discharge and the lack of an operator for the clarifer (Ref. No. 4).

Celotex received a number of notices of prosecution from NJDEP: in 1971 for not keeping daily records of solid waste; in 1977 for improper site maintenance; in 1981 for operating in an area other than that specified on the engineering designs; again in 1981 for failure to notify the state of smoldering, smoking, or burning in the landfill; and in 1982 for operating outside the designated area and not utilizing proper cover for the landfill (Ref. No. 32). As a result of these violations, Celotex was ordered to begin procedures for closure of the landfill and cease landfilling operations in 1982 (Ref. No. 38). This closure has been delayed by the alleged need for a Waterfront Development Permit (Ref. No. 39). It should also be noted that an asphalt spill and several minor oil spills have occurred on site (Ref. No. 40). There are a number of drums stored on site, the exact contents of which have not been characterized. Leaks from these drums have been observed, and the potential for contaminants to reach groundwater exists due to lack of containment at the drum storage area (Ref. No. 13). Lack of containment may also create the potential for solid wastes stored temporarily in a pit on site to contribute to contamination of groundwater.

Sampling conducted by NUS Corp. Region 2 FIT on April 26 and 27, 1990 revealed levels of asbestos above background levels and significantly exceeding PMCLs in groundwater samples (Ref. No. 9). Previous groundwater sampling by Northeastern Analytical Services also yielded high asbestos concentrations (Ref. No. 8, pp. 3, 4). Asbestos was used in on-site production of roofing materials, and daily plant wastes were landfilled, making asbestos contamination of the shallow groundwater table attributable to the site (Ref. No. 4, p. 2).

The sampling carried out by NUS Corp. also provided evidence of surface water contamination. Samples were taken from a drainage creek on the eastern boundary of the landfill . The presence of polyaromatic hydrocarbons at levels above background were detected in samples taken from the sediment in the drainage creek (Ref. No. 9, pp. 9, 10). These semivolatiles can be attributed to the site due to the use of petroleum-based products (specifically asphalt) in on-site production, and to the landfilling of plant wastes (Ref. Nos. 4, p. 1; 34). The water from this creek discharges into a marshy area, and eventually contacts the Raritan River, particularly with inundation of the area at high tide.

The analysis of catch basin samples indicates the presence of polyaromatic hydrocarbons which can be attributed to the site due to production processes on the site which involved materials containing semivolatiles (Ref. Nos. 4, pp. 1, 7; 9, pp. 11, 12). The catch basin holds stormwater runoff, and any overflow is discharged to the Raritan River (Ref. No. 4, p. 1). Any contaminants present in the water in the catch basin will be discharged to the Raritan River during periods of overflow.

It is recommended that a **LISTING SITE INSPECTION (LSI)** be conducted at Celotex (A), Perth Amboy, New Jersey. Releases of contaminants to the alluvium (water-table) aquifer and the drainage creek on the site have been documented. The potential exists for a release of contaminants to the aquifer of concern. The Old Bridge Aquifer is a sole source aquifer (Ref. No. 20, pp. 1, 3), and industrial, private, and public supply wells all tap the aquifer within 3 miles of the site (Ref. Nos. 20, pp. 1, 2; 22). The public supply wells which tap the aquifer of concern within a 3-mile radius of the site serve approximately 8,500 people (Ref. Nos. 23, 24). Contamination of surface water could potentially lead to contamination of the Raritan River, which is used for fishing and recreation (Ref. Nos. 4, p. 4; 25, 28). In addition, coastal wetlands are located 0.5 mile downstream of the site and could be negatively impacted by contamination of the Raritan River (Ref. Nos. 22, 26). Public contact with the landfill has been documented (Ref. No. 6, pp. 5, 8). At the present time, the landfill has apparently not been capped or vented, and is not lined (Ref. No. 5). The contri-bution from the landfill to the existing pollutant load in the Raritan River should be more definitively characterized. The population using groundwater for drinking receives its supply from municipal wells located across the Raritan River. The possibility that the river forms a barrier preventing contaminated groundwater from the site from reaching these municipal wells should be investigated.

ATTACHMENT 1

EXHIBIT A

PHOTOGRAPH LOG

CELOTEX (A)
PERTH AMBOY, NEW JERSEY

ON-SITE RECONNAISSANCE: MARCH 13, 1990

CELOTEX (A)
PERTH AMBOY, NEW JERSEY
MARCH 13, 1990
ON-SITE RECONNAISSANCE

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS TAKEN BY M. COLER

Photo Number	Description	Time
1P-1	Photo of access road on south face of landfill, facing west.	1223
1P-2	Photo of south face of landfill, facing north.	1223
1P-3	Photo of access road on south face of landfill, facing east.	1223
1P-4	Photo of oil slick on north bank of Raritan River.	1227
1P-5	Photo of 001 outfall pipe on north bank of Raritan River, facing down from north bank of Raritan River.	1231
1P-6	Photo of outfall pipe on north bank of Raritan River, facing north.	1231
1P-7	Photo of effluent from 001 outfall pipe, on south face of landfill, facing north.	1231
1P-8	Photo of south face of landfill where fire occurred.	1235
1P-9	Photo of B. Carson and R. Settino on air, opening MW4.	1248
1P-10	Photo of exposed roofing felt on south face of landfill, facing north, in vicinity of fire.	1257
1P-11	Photo of exposed roofing felt on south face of landfill, facing north.	1257
1P-12	Photo of exposed drum on south face of landfill, facing north.	1302
1P-13	Photo of area where second fire occurred, near MW3, facing north.	1305
1P-14	Photo of B. Carson and R. Settino on air, opening MW3.	1309
1P-15	Photo of east face of landfill facing southwest, where fire occurred.	1317
1P-16	Photo of flat area adjacent to landfill where fire occurred, from on top of landfill, facing east.	1334
1P-17	Photo of creek on east face of landfill, facing south.	1345
1P-18	Photo of pit on north side of landfill, facing east.	1350

CELOTEX (A)
PERTH AMBOY, NEW JERSEY
MARCH 13, 1990

PHOTOGRAPH INDEX
(cont'd)

Photo Number	Description	Time
1P-19	Photo of catch basin for 001 permitted discharge.	1358
1P-20	Photo of abandoned tank car along fence, near access gate.	1407
1P-21	Photo of access gate, facing southeast.	1420
1P-22	Photo of debris along fence, facing east.	1430
1P-23	Photo of debris and tanks, facing north.	1432

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-1 March 13, 1990 1223
Photo of railroad tracks on south face of landfill, facing west.

1P-2 March 13, 1990 1223
Photo of south face of landfill, facing north.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-3 March 13, 1990 1223
Photo of railroad tracks, on south face of landfill, facing east.

1P-4 March 13, 1990 1227
Photo of oil slick on north bank of Raritan River.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-5 March 13, 1990 1231
Photo of 001 outfall pipe on north bank of Raritan River, facing down from north bank of Raritan River.

1P-6 March 13, 1990 1231
Photo of outfall pipe on north bank of Raritan River, facing north.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-7 March 13, 1990 1231
Photo of effluent from 001 outfall pipe, on south face of landfill, facing north.

1P-8 March 13, 1990 1235
Photo of south face of landfill where fire occurred.

1P-9 March 13, 1990 1248
Photo of B. Carson and R. Settino on air,opening MW4.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-10 March 13, 1990 1257
Photo of exposed roofing felt on south face of landfill, facing north, in vicinity of fire.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-11 March 13, 1990 1257
Photo of exposed roofing felt on south face of landfill, facing north.

1P-12 March 13, 1990 1302
Photo of exposed drum on south face of landfill, facing north.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1305

1P-13 March 13, 1990
Photo of area where second fire occurred, near MW3, facing north.

1309

1P-14 March 13, 1990
Photo of B. Carson and R. Settino on air, opening MW3.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-15 March 13, 1990 1317
Photo of east face of landfill facing southwest, where fire occurred.

1P-16 March 13, 1990 1334
Photo of flat area adjacent to landfill where fire occurred, from on top of landfill, facing east.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-17 March 13, 1990 1345
Photo of creek on east face of landfill, facing south.

1P-18 March 13, 1990 1350
Photo of pit on north side of landfill, facing east.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-19 March 13, 1990 1358
Photo of catch basin for 001 permitted discharge.

1P-20 March 13, 1990 1407
Photo of abandoned tank car along fence, near access gate.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-21 March 13, 1990 1420
Photo of access gate, facing southeast.

1P-22 March 13, 1990 1430
Photo of debris along fence, facing east.

1P-23 March 13, 1990 1432
Photo of debris and tanks, facing north.

EXHIBIT B

PHOTOGRAPH LOG

CELOTEX (A)
PERTH AMBOY, NEW JERSEY

SITE INSPECTION: APRIL 26-27, 1990

CELOTEX (A)
PERTH AMBOY, NEW JERSEY
APRIL 26, 1990

PHOTOGRAPH INDEX

PHOTOGRAPHS 1P-1 THROUGH 1P-17 WERE TAKEN BY M. COLER;
PHOTOGRAPHS 3P-1 THROUGH 3P-12 WERE TAKEN BY G. CALABRESE.

Photo Number	Description	Time
1P-1	Photo of D. Benfer and M. Gallagher collecting GW1 sample from MW4.	1245
1P-2	Photo of D. Benfer and M. Gallagher collecting GW5 sample from MW4.	1247
1P-3	Photo of railroad bridge near location of SW4/SED4 sample, facing south.	1320
1P-4	Photo of oily sheen on water in creek near location of SW4 sample, facing south.	1320
1P-5	Photo of workers cleaning up sewage spillage on north bank of Raritan River, facing south.	1320
1P-6	Photo of creek leading into Raritan River, under railroad bridge, facing south.	1320
1P-7	Photo of D. Benfer and M. Gallagher, on air collecting GW2 sample from MW3.	1405
1P-8	Photo of rusted drum near location MW2.	1440
1P-9	Photo of D. Benfer and M. Gallagher collecting GW3 sample from MW2.	1512
1P-10,11,12	Panoramic view sweeping southwest from parking lot of neighboring apartment building to ponded water near stormwater drainage pipe.	1740
1P-13	Photo of ponded water, facing south.	1745
1P-14	Photo of rivulet from ponded water entering creek near stormwater discharge pipe.	1745
1P-15	Photo of debris north of ponded water, facing north.	1745
1P-16	Close-up photo of ponded water.	1745
1P-17	Photo of Benfer and Gallagher collecting GW4 from MW1.	1825
3P-1	Photo of A. Perez collecting SW1 sample.	1140
3P-2	Photo of J. Torchia collecting SED1 sample.	1220

CELOTEX (A)
PERTH AMBOY, NEW JERSEY
APRIL 26, 1990

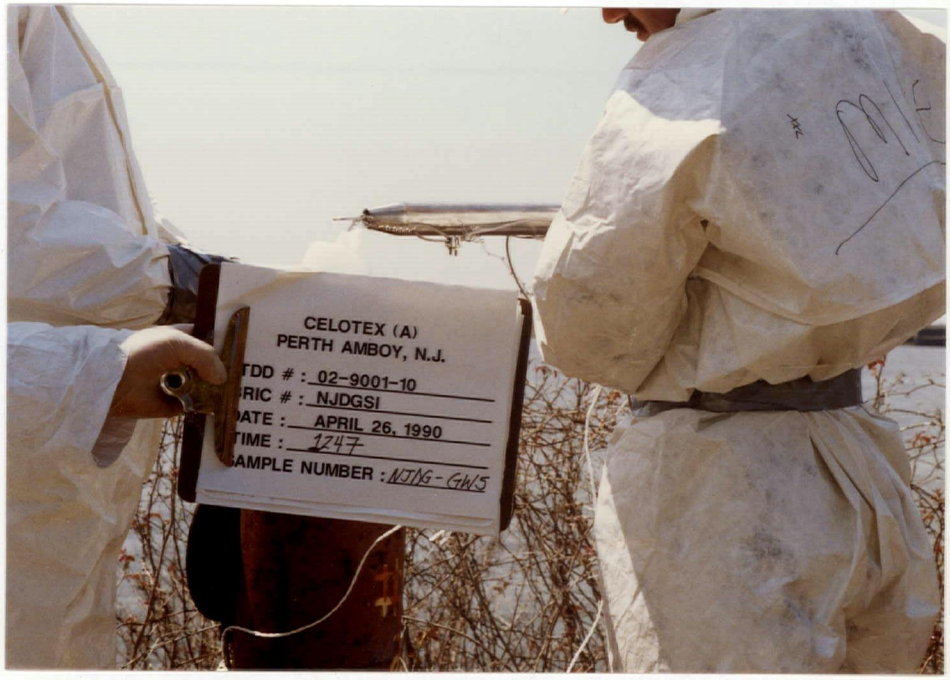
PHOTOGRAPH INDEX
(cont'd)

Photo Number	Description	Time
3P-3	Photo of J. Torchia collecting SW4 sample.	1305
3P-4	Photo of A. Perez collecting SED4 sample.	1335
3P-5	Photo of J. Torchia collecting SW3 sample.	1530
3P-6	Photo of A. Perez collecting SED3 sample.	1555
3P-7	Photo of drum downstream of SED3 sample.	1600
3P-8	Photo of drum upstream of SED3 sample.	1600
3P-9	Photo of creek, facing downstream (south).	1610
3P-10	Photo of creek, facing upstream (north).	1610
3P-11	Photo of A. Perez collecting SW2 sample.	1745
3P-12	Photo of J. Torchia collecting SED2 sample.	1800

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-1

April 26, 1990 1245
Photo of D. Benfer and M. Gallagher collecting GW1 sample from MW4.



1P-2

April 26, 1990 1247
Photo of D. Benfer and M. Gallagher collecting GW5 sample from MW4.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-3 April 26, 1990 1320
Photo of railroad bridge near location of SW4/SED4 sample, facing south.

1P-4 April 26, 1990 1320
Photo of oily sheen on water in creek near location of SW4 sample, facing south.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-5 April 26, 1990 1320
Photo of workers cleaning up sewage spillage on north bank of Raritan River, facing south.

1P-6 April 26, 1990 1320
Photo of creek leading into Raritan River, under railroad bridge, facing south.

1P-7

April 26, 1990
Photo of D. Benfer and M. Gallagher, on air collecting GW2 sample at MW3.

1405

1P-8 April 26, 1990 1440
Photo of rusted drum near location MW2.

1P-9 April 26, 1990 1512
Photo of D. Benfer and M. Gallagher collecting GW3 sample from MW2.

NUS CORPORATION

02-9001-10-SI
Rev. No. 0

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-10,11,12

April 26, 1990
Panoramic view sweeping southwest from parking lot of neighboring apartment building to "leachate" pit near stormwater drainage pipe.

1740

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-13

April 26, 1990
Photo of ponded water facing south.

1745

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-14 April 26, 1990 1745
Photo of rivulet from ponded water entering creek near stormwater discharge pipe.

1P-15 April 26, 1990 1745
Photo of debris north of ponded water, facing north.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

1P-16

April 26, 1990
Close-up photo of ponded water.

1745

1P-17

April 26, 1990
Photo of Benfer and Gallagher collecting GW4 from MW1.

1820

CELOTEX (A), PERTH AMBOY, NEW JERSEY

3P-1 April 26, 1990 1140
Photo of A. Perez collecting SW1 sample.

3P-2 April 26, 1990 1220
Photo of J. Torchia collecting SED1 sample.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

3P-3

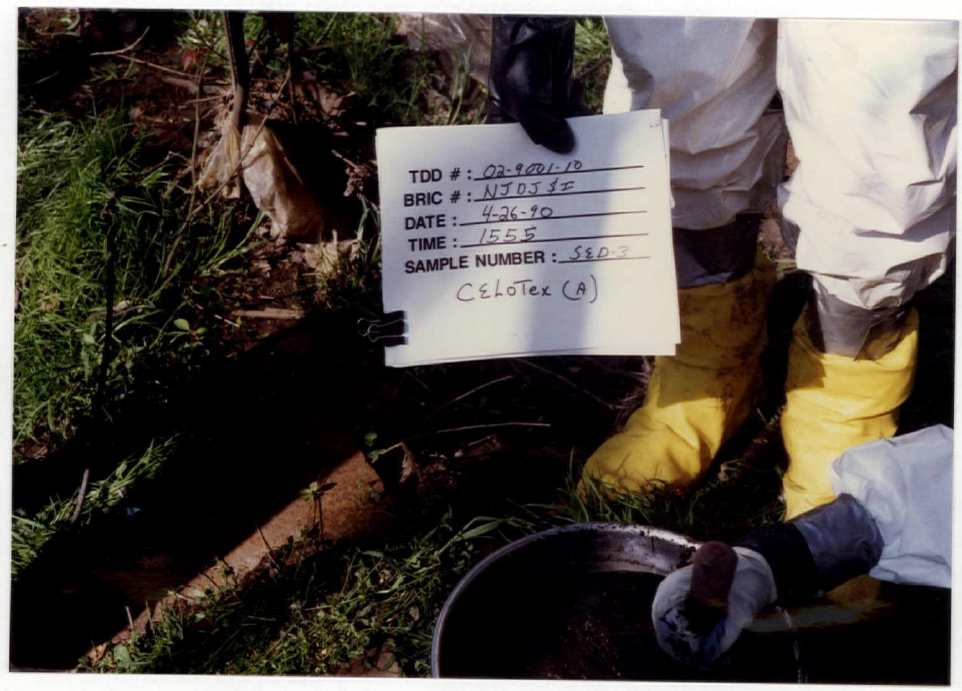
April 26, 1990 1305
Photo of J. Torchia collecting SW4 sample.

3P-4

April 26, 1990 1335
Photo of A. Perez collecting SED4 sample.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

3P-5 April 26, 1990 1530
Photo of J. Torchia collecting SW3 sample.



3P-6 April 26, 1990 1555
Photo of A. Perez collecting SED3 sample.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

3P-7

April 26, 1990
Photo of drum downstream of SED3 sample.

1600

3P-8

April 26, 1990
Photo of drum upstream of SED3 sample.

1600

CELOTEX (A), PERTH AMBOY, NEW JERSEY

3P-9

April 26, 1990
Photo of creek, facing downstream (south).

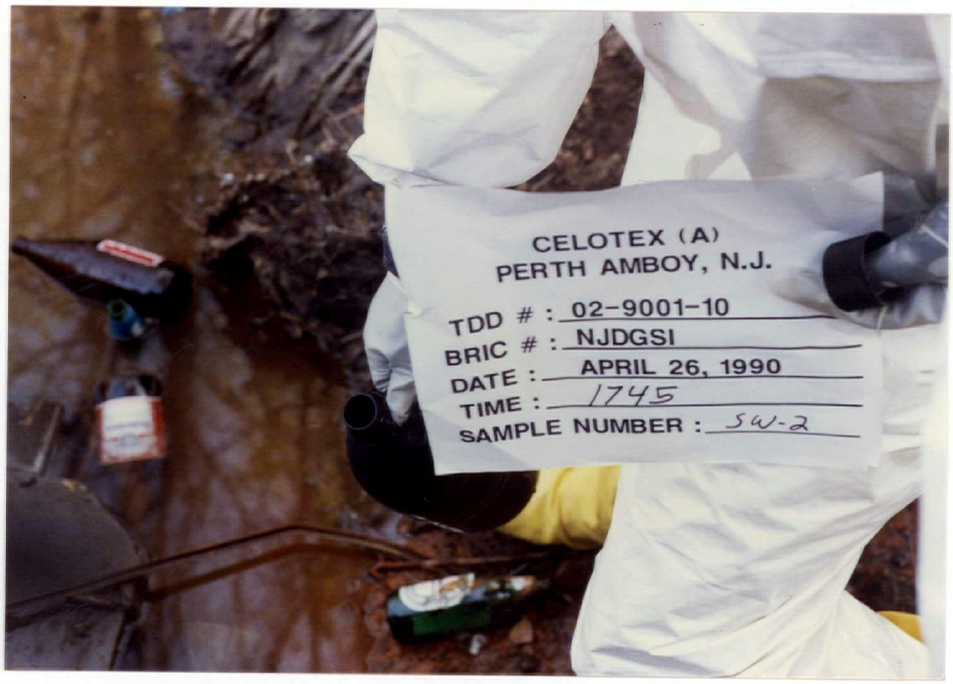
1610

3P-10

April 26, 1990
Photo of creek, facing upstream (north).

1610

CELOTEX (A), PERTH AMBOY, NEW JERSEY



3P-11 April 26, 1990 1745
Photo of A. Perez collecting SW2 sample.

3P-12 April 26, 1990 1800
Photo of J. Torchia collecting SED2 sample.

CELOTEX (A)
PERTH AMBOY, NEW JERSEY
APRIL 27, 1990

PHOTOGRAPH INDEX

Photo Number	Description	Time
2P-1	Photo of M. Gallagher and M. Meldrim collecting SED5 sample from catch basin, east of MW5.	1040
2P-2	Photo of M. Gallagher and M. Meldrim collecting SED6 sample from catch basin, east of MW5.	1042
2P-3	Photo of tank truck cleaning company located adjacent to south face of landfill, facing northeast from location of SED5/SED6.	1112
2P-4	Photo of gully running down north face of landfill, from top of landfill, facing south.	1155
2P-5	Photo of M. Gallagher collecting S1 sample.	1204
2P-6	Photo of M. Meldrim collecting S2 sample.	1225
2P-7	Photo of M. Meldrim collecting S3 sample.	1240
2P-8,9	Photos of suspected leachate or railroad car spillage at bottom of southwest slope of landfill, near radio tower.	1255

ALL PHOTOGRAPHS WERE TAKEN BY M. COLER.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

2P-1

April 27, 1990 1040
Photo of M. Gallagher and M. Meldrim collecting SED5 sample from catch basin, east of MW5.

2P-2

April 27, 1990 1042
Photo of M. Gallagher and M. Meldrim collecting SED6 sample from catch basin, east of MW5.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

2P-3 April 27, 1990 1112
Photo of tank truck cleaning company located adjacent to south face of landfill, facing northeast from location of SED5/SED6.

2P-4 April 27, 1990 1155
Photo of gully running down north face of landfill, from top of landfill, facing south.

CELOTEX (A), PERTH AMBOY, NEW JERSEY

2P-5

April 27, 1990 1204
Photo of M. Gallagher collecting S1 sample.

2P-6

April 27, 1990 1225
Photo of M. Meldrim collecting S2 sample.

2P-7 April 27, 1990 1240

Photo of M. Meldrim collecting S3 sample.

NUS CORPORATION

02-9001-10-SI
Rev. No. 0

CELOTEX (A), PERTH AMBOY, NEW JERSEY

2P-8,9

April 27, 1990
Photos of suspected leachate or railroad car spillage at bottom of southwest slope of landfill, near radio tower.

1255

ATTACHMENT 2

REFERENCES

1. U.S. EPA Superfund Program, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), p. 35, June 7, 1990.

2. Election Division, New Jersey Department of State, CN304, Trenton, N.J., Congressional Districts. January 1987.

3. EPA Notification of Hazardous Waste Site 103(c) for the Celotex (A) site. June 4, 1981.

4. Preliminary Assessment, Celotex (A), prepared by United States Environmental Protection Agency (U.S. EPA), August 28, 1987.

5. Telecon Note: Conversation between Mark Rudman, Celotex Corp., and Bob Cantagallo, NUS Corp., August 28, 1990.

6. Field Notebook No. 0536, Celotex (A), TDD No. 02-9001-10, On-Site Reconnaissance, March 13, 1990, Site Inspection, April 26, and 27, 1990, and Field Notebook No. 0569, Celotex (A), TDD No. 02-9001-10, Site inspection, April 26, 1990, NUS Corp Region 2 FIT, Edison, New Jersey. .

7. NJDEP Draft Permit NJ0050750, Celotex (A), State of New Jersey Department of Environmental Protection, August 17, 1984.

8. Monitoring Well Results, Celotex (A), Sampling dates April 20, June 19, October 25, 1989, and January 10-11, 1990, NJPDES Permit No. NJ0050750.

9. Sampling Trip Report, Celotex (A), NUS Corp, Region 2 RIT site inspection conducted on April 26-27, 1990. U. S. EPA Contract Laboratory Program, Skinner and Sherman, Case NO. 13938, and U. S. EPA Contract Laboratory Program, R.J. Lee Group, SAS No. 5632B, Laboratory Analyses from NUS Corp. Region 2 FIT Site Inspection Conducted on April 26-27, 1990.

10. EPA Health Advisories, MCLs/ PMCLs, p.1, May 3, 1988, revision received June 21, 1990.

11. Lappenbusch, W.L. Contaminated Waste sites, Property, and Your Health. Alexandria, Virginia, Lappenbusch Environmental Health, Inc.,pp. 232, 1988.

12. Industrial Pretreatment Inspection Report, Celotex (A), NJDEP, Division of Water Resources, April 29, 1986.

13. Bureau of Hazardous Waste Facility Inspection Reports, Celotex (A), May 30, 1980, August 6, 1980, November 19, 1980; January 6, 1982; January 28, 1982.

14. Geohydrology and Digital-Simulation Model of the Farrington Aquifer in the Northern Coastal Plain of New Jersey. U.S. Geological Survey Water Resources Investigations, pp.79-106.

15. Waste Treatment Management Planning, Task 8 - Groundwater Analysis. Middlesex County 208-Area, New Jersey. Geraghty and Miller Inc., November, 1976.

16. Uncontrolled Hazardous Waste Site Ranking System, A User's Manual, 40 CFR, Part 300, Appendix A, 1984.

17. Pucci, A.A. Jr. Summary of Studies on the Hydrogeology of Saltwater Intrusion in the Potomac-Raritan-Magothy Aquifer System, Central New Jersey. Geological Investigations of the Coastal Plain of Southern New Jersey: Part 2, 1985.

REFERENCES (CONT'D)

18. Pre-Quaternary Geology and lines of section plate and Hydrogeologic Section VI (plate 7). Waste Treatment Management Planning. Middlesex County 208-Area, New Jersey. Geraughty and Miller Inc., November, 1976.

19. Designated Sole Source Aquifers in Region II, U.S. EPA, date unknown.

20. U.S. Geological Survey Well Inventory, Middlesex County, U.S.G.S., Trenton, New Jersey, February, 1986.

21. Telecon Note: Conversation between Mr. Garnett, South Amboy Water Department, and Bob Cantagallo, NUS Corp., August 30, 1990.

22. Three Mile Vicinity Map. based on U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 Minute Series, "Perth Amboy" quadrangle, N.J., 1956, revised 1981; "South Amboy" quadrangle, N.J., 1954, revised 1981; "Arthur Kill" quadrangle, N.J, 1966, revised 1981; "Keyport" quadrangle, N.J., 1954, revised 1970.

23. Telecon Note: Conversation between Richard Muchanic, South Amboy Water Dept., and Maria Coler, NUS Corp., February 21, 1990.

24. Water Supply Overlay, Sheets 25, 26, 28, 29, State of New Jersey Department of Environmental Protection, August 1976.

25. Telecon Note: Conversation between Don Byrne, NJDEP Fish and Game, Nacote Creek Station, and Maria Coler, NUS Corp., February 14, 1990.

26. Atlas of National Wetlands Inventory Maps for New Jersey, U.S. Department of the Interior, Fish and Wildlife Service, 1984.

27. Atlantic Coast Ecological Inventory, Newark, N.J.-N.Y.-PA., U.S. Fish and Wildlife Service, 1980.

28. Surface Water Quality Standards,NJAC 7:9-4, New Jersey Department of Environmental Protection/Division of Water Resources, May 1985.

29. Proposed Compliance Order, Celotex (A), Region II U.S. EPA, May 1975.

30. Telecon Note: Conversation between T. Janin, Janin Corp., and D. Potts, Bureau of Hazardous and Chemical Wastes, June 17, 1981.

31. General Sciences Corporation, Graphical Exposure Modeling System (GEMS). Landover, Maryland, 1986.

32. Notices of Prosecution: Celotex(A), December 30, 1976; September 1, 1977; July 15, 1981, and May 12, 1982.

33. NUS Corporation Region 2 FIT site inspection conducted on March 30, 1983, TDD No. 02-8301-26.

34. Material Specifications for Ebontex Emulsion, Celotex Corp., p.2, June 17, 1990.

REFERENCES (CONT'D)

35. Fact sheet and public notice for Draft Permit, Celotex (A), State of New Jersey Department of Environmental Protection, April 8, 1986.

36. NJPDES discharge to surface water permit, Permit No. NJ0050750, New Jersey Department of Environmental Protection, Trenton, New Jersey, expires November 30, 1991.

37. Public notice of proposal to issue POTW NJPDES permit to Celotex Corporation, NJDEP, Division of Water Resources, Bureau of Industrial Waste Management, CN-029, Trenton, N.J. , June 17, 1986.

38. Administrative Consent Order: Celotex (A), NJDEP, August 26, 1982.

39. Letter from a representative of the Jim Walter Corporation, Tampa, Florida, to J. A. Castner, Chief, Bureau of Sanitary Landfill Closure, Division of Waste Management, NJDEP, March 20,1986.

40. Telecon Note: Conversation between Mark Rudman, Celotex Corp., and Bob Cantagallon, NUS Corp., September 17, 1990.

REFERENCE NO. 1

EPA ID NO.	SITE NAME STREET CITY COUNTY CODE AND NAME	STATE ZIP CONG DIST.	NFA. FLAG	OPRBLE UNIT	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	CURRENT EVENT LEAD
NJD002177640	CDI DISPERSIONS 27 HAYNES AVE. NEWARK 013 ESSEX	NJ 07114		00	DS1 PA1	03/24/89	03/13/89 06/24/89	EPA (FUND) EPA (FUND)
NJD079323044	CELANESE CHEM CO INC 375 DOREMUS AVE NEWARK 013 ESSEX	NJ 07105		00	DS1 PA1 SI1	05/01/85	04/10/84 11/01/83 05/31/85	STATE(FUND) EPA (FUND) EPA (FUND)
NJD980530299	CELANESE NEWARK TERMINAL 354 AND 375 DOREMUS AVENUE NEWARK 013 ESSEX	NJ 07105		00	DS1 PA1 SI1	08/01/85	06/01/81 01/01/83 09/01/85	EPA (FUND) STATE(FUND) EPA (FUND)
NJD002397701	CELANESE PLASTICS & SPECIALTIES JAMES ST BELVIDERE 041 WARREN	NJ 07823		00	DS1 PA1 SI1	02/01/85	10/01/80 06/01/84 02/01/85	EPA (FUND) EPA (FUND) EPA (FUND)
NJD980528855	CELLITE CORK HILL RD FRANKLIN 037 SUSSEX	NJ 07416		00	DS1 PA1 SI1	07/01/84 09/21/88	02/01/80 08/01/84 09/28/88	EPA (FUND) OTHER EPA (FUND)
NJD001394303	CELLOFILM CORP 241 UNION AVE WOOD-RIDGE 003 BERGEN	NJ 07075	NFA	00	DS1 PA1	06/01/84	06/01/81 06/01/84	EPA (FUND) EPA (FUND)
NJD000813451	CELLOFILM CORPORATION 45-5 CORNELIA STREET NEWARK 013 ESSEX	NJ 07105		00	DS1 PA1	03/24/89	03/13/89 06/24/89	EPA (FUND) EPA (FUND)
NJD055930549	CELOTEX (A) MARKET & HERBERT STS PERTH AMBOY 023 MIDDLESEX	NJ 08861		00	DS1 PA1	09/14/87	06/01/81 09/15/87	EPA (FUND) STATE(FUND)

REFERENCE NO. 2

CONGRESSIONAL DISTRICTS

DISTRICT ONE: **Part of Burlington County** (Maple Shade Twp., Palmyra Borough, Riverton Borough), **Part of Camden County** (Audubon Park Borough, Barrington Borough, Bellmawr Borough, Berlin Borough, Berlin Twp., Brooklawn Borough, Camden City, Chesilhurst Borough, Clementon Borough, Collingswood Borough, Gibbsboro Borough, Gloucester City, Gloucester Twp., Haddon Twp., Hi-Nella Borough, Laurel Springs Borough, Lawnside Borough, Lindenwold Borough, Magnolia Borough, Mount Ephraim Borough, Oaklyn Borough, Pennsauken Twp., Pine Hill Borough, Pine Valley Borough, Runnemede Borough, Somerdale Borough, Stratford Borough, Tavistock Borough, Winslow Twp. and Woodlynne Borough), and **Part of Gloucester County** (Clayton Borough, Deptford Twp., East Greenwich Twp., Greenwich Twp., Harrison Twp., Logan Twp., Monroe Twp., National Park Borough, Paulsboro Borough, Swedesboro Borough, Washington Twp., Wenonah Borough, West Deptford Twp., Westville Borough, Woodbury City, Woodbury Hts. Borough and Woolwich Twp.).

DISTRICT TWO: **Atlantic County, Cape May County, Cumberland County, Salem County** and **Part of Gloucester County** (Elk Twp., Franklin Twp., Glassboro Borough, Mantua Twp., Newfield Borough, Pitman Borough and South Harrison Twp.).

DISTRICT THREE: **Part Of Monmouth County** (Allenhurst Borough, Asbury Park City, Atlantic Highlands, Borough, Avon-by-the-Sea Borough, Belmar Borough, Bradley Beach Borough, Deal Borough, Eatontown Borough, Fair Haven Borough, Hazlet Twp., Highlands Borough, Interlaken Borough, Keansburg Borough, Keyport Borough, Little Silver Borough, Loch Arbour Village, Long Branch City, Manasquan Borough, Middletown Twp., Monmouth Beach Boro, Neptune City Borough, Neptune Twp., Oceanport Borough, Ocean Twp., Red Bank Borough, Rumson Borough, Sea Bright Borough, Sea Girt Borough, Shrewsbury Borough, Shrewsbury Twp., Spring Lake Borough, Spring Lake Heights Borough, South Belmar Borough, Tinton Falls Borough, Union Beach Borough and West Long Branch Borough) and **Part of Ocean County** (Bay Head Borough, Brick Twp., Dover Twp., Island Heights Borough, Lakewood Twp., Lavallette Borough, Mantoloking Borough, Point Pleasant Beach Borough, Point Pleasant Borough, Seaside Heights Borough and South Toms River Borough).

DISTRICT FOUR: **Part of Burlington County** (Bordentown City, Bordentown Twp., Burlington City, Burlington Twp., Chesterfield Twp., Eastampton Twp., Fieldsboro Borough, Florence Twp., Mansfield Twp., Springfield Twp. and Westampton Twp.) **Part of Mercer County** (East Windsor Twp., Ewing Twp., Hamilton Twp., Hightstown Borough, Hopewell Borough, Hopewell Twp., Lawrence Twp., Pennington Borough, Trenton City and Washington Twp.), **Part of Middlesex County** (Jamesburg Borough, Monroe Twp. and Plainsboro Twp.), **Part of Monmouth County** (Allentown Borough, Brielle Borough, Colts Neck Twp., Englishtown Borough, Farmingdale Borough, Freehold Borough, Freehold Twp., Howell Twp., Manalapan Twp., Marlboro Twp., Millstone Twp., Roosevelt Borough, Upper Freehold Twp. and Wall Twp.), and **Part of Ocean County** (Jackson Twp.).

DISTRICT FIVE: **Part of Bergen County** (Allendale Borough, Alpine Borough, Bergenfield Borough, Closter Borough, Cresskill Borough, Demarest Borough, Dumont Borough, Emerson Borough, Glen Rock Borough, Harrington Park Borough, Haworth Borough, Hillsdale Borough, Ho-Ho-Kus Borough, Mahwah Twp., Midland Park Borough, Montvale Borough, Northvale Borough, Norwood Borough, Oakland Borough, Old Tappan Borough, Oradell Borough, Paramus Borough, Park Ridge Borough, Ramsey Borough, Ridgewood Village, River Vale Twp., Rochelle Park Twp., Rockleigh Borough, Saddle River Borough, Tenafly Borough, Upper Saddle River Borough, Waldwick Borough, Washington Twp., Westwood Borough, Woodcliff Lake Borough and Wyckoff Twp.), **Part of Passaic County** (Bloomingdale Borough, Haledon Borough, Hawthorne Borough, North Haledon Borough, Ringwood Borough, Wanaque Borough and West Milford Twp.), and **Part of Sussex County** (Andover Borough, Andover Twp., Branchville Borough, Frankford Twp., Franklin Borough, Fredon Twp., Hamburg Borough, Hardyston Twp., Hopatcong Borough, Lafayette Twp., Montague Twp., Newton Town, Ogdensburg Borough, Sandyston Twp., Sparta Twp., Stanhope Borough, Sussex Borough, Vernon Twp., Walpack Twp. and Wantage Twp.).

DISTRICT SIX: **Part of Middlesex County** (Carteret Borough, Edison Twp., Highland Park Borough, Metuchen Borough, New Brunswick City, North Brunswick Twp., Old Bridge Twp., Perth Amboy City, Sayreville Borough, South Amboy City, South River Borough and Woodbridge Twp.), **Part of Monmouth County** (Aberdeen Twp. and Matawan Borough), and **Part of Union County** (Linden City, Rahway City and Roselle Borough).

DISTRICT SEVEN: **Part of Essex County** (Millburn Twp.), **Part of Middlesex County** (Dunellen Borough and Middlesex Borough), **Part of Somerset County** (Bound Brook Borough, Bridgewater Twp., Green Brook Twp., Manville Borough, North Plainfield Borough, Warren Twp. and Watchung Borough) and **Part of Union County** (Berkeley Heights Twp., Clark Twp., Cranford Twp., Elizabeth City, Fanwood Borough, Garwood Borough, Kenilworth Borough, Mountainside Borough, New Providence Borough, Plainfield City, Roselle Park Borough, Scotch Plains Twp., Springfield Twp., Summit City, Union Twp., Westfield Town and Winfield Twp.).

DISTRICT EIGHT: **Part of Bergen County** (Franklin Lakes Borough), **Part of Essex County** (Part of Belleville Town, Bloomfield Town, Glen Ridge Borough, Montclair Town and Nutley Town), **Part of Morris County** (Riverdale Borough) and **Part of Passaic County** (Clifton City, Little Falls Twp., Passaic City, Paterson City, Pompton Lakes Borough, Prospect Park Borough, Totowa Borough, Wayne Twp. and West Paterson Borough).

DISTRICT NINE: **Part of Bergen County** (Bogota Borough, Carlstadt Borough, Cliffside Park Borough, East Rutherford Borough, Edgewater Borough, Elmwood Park Borough, Englewood City, Englewood Cliffs Borough, Fair Lawn Borough, Fairview Borough, Fort Lee Borough, Garfield City, Hackensack City, Hasbrouck Heights Borough, Leonia Borough, Little Ferry Borough, Lodi Borough, Lyndhurst Twp., Maywood Borough, Moonachie Borough, New Milford Borough, North Arlington Borough, Palisades Park Borough, Ridgefield Borough, Ridgefield Park Village, River Edge Borough, Rutherford Borough, Saddle Brook Twp., South Hackensack Twp., Teaneck Twp., Teterboro Borough, Wallington Borough and Wood-Ridge Borough) and **Part of Hudson County** (East Newark Borough, Part of Kearny Town, and Secaucus Town).

DISTRICT TEN: **Part of Essex County** (Part of Belleville Town, East Orange City, Irvington Town, Newark City and Orange City) and **Part of Union County** (Hillside Township).

DISTRICT ELEVEN: **Part of Essex County** (Caldwell Borough, Cedar Grove Twp., Essex Fells Borough, Fairfield Borough, Livingston Twp., Maplewood Twp., North Caldwell Borough, Roseland Borough, South Orange Village, Verona Borough, West Caldwell Borough and West Orange Town), **Part of Morris County** (Boonton Town, Boonton Twp., Butler Borough, Chatham Borough, Chester Borough, Chester Twp., Denville Twp., Dover Town, East Hanover Twp., Florham Park Borough, Hanover Twp., Jefferson Twp., Kinnelon Borough, Lincoln Park Borough, Madison Borough, Mendham Borough, Mendham Twp., Mine Hill Twp., Montville Twp., Mountain Lakes Borough, Mount Arlington Borough, Mount Olive Twp., Netcong Borough, Persippany-Troy Hills Twp., Pequannock Twp., Randolph Twp., Rockaway Borough, Rockaway Twp., Roxbury Twp., Victory Gardens Borough and Wharton Borough), **Part of Sussex County** (Byram Twp. and Green Twp.) and **Part of Warren County** (Allamuchy Twp., Frelinghysen Twp., Independence Twp. and Liberty Twp.).

DISTRICT TWELVE: **Hunterdon County, Part of Mercer County** (Princeton Borough. Princeton Twp. and West Windsor Twp.) **Part of Middlesex County** (Cranbury Twp., East Brunswick Twp., Helmetta Borough, Milltown Borough, Piscataway Twp., South Brunswick Twp., South Plainfield Borough and Spotswood Borough), **Part of Morris County** (Chatham Twp., Harding Twp., Morris Plains Borough, Morristown Town, Morris Twp., Passaic Twp. and Washington Twp.), **Part of Somerset County** (Bedminster Twp., Bernards Twp., Bernardsville Borough, Branchburg Twp., Far Hills Borough, Franklin Twp., Hillsborough Twp., Millstone Borough, Montgomery Twp., Peapack-Gladstone Borough, Raritan Borough, Rocky Hill Borough, Somerville Borough and South Bound Brook Borough), **Part of Sussex County** (Hampton Twp. and Stillwater Twp.) and **Part of Warren County** (Alpha Borough, Belvidere Town, Blairstown Twp., Franklin Twp., Greenwich Twp., Hackettstown Town, Hardwick Twp., Harmony Twp., Hope Twp., Knowlton Twp., Lopatcong Twp., Mansfield Twp., Oxford Twp., Pahequarry Twp., Phillipsburg Town, Pohatcong Twp., Washington Borough, Washington Twp. and White Twp.).

DISTRICT THIRTEEN: **Part of Burlington County** (Bass River Twp., Beverly City, Cinnaminson Twp., Delanco Twp., Delran Twp., Edgewater Park Twp., Evesham Twp., Hainesport Twp., Lumberton Twp., Medford Lakes Borough, Medford Twp., Moorestown Twp., Mount Holly Twp., Mount Laurel Twp., New Hanover Twp., North Hanover Twp., Pemberton Borough, Pemberton Twp., Riverside Twp., Shamong Twp., Southampton Twp., Tabernacle Twp., Washington Twp., Willingboro Twp., Woodland Twp. and Wrightstown Borough), **Part of Camden County** (Audubon Borough, Cherry Hill Twp., Haddonfield Borough, Haddon Heights Borough, Merchantville Borough, Voorhees Twp. and Waterford Twp.) and **Part of Ocean County** (Barnegat Light Borough, Barnegat Twp., Beach Haven Borough, Beachwood Borough, Berkeley Twp., Eagleswood Twp., Harvey Cedars Borough, Lacey Twp., Lakehurst Borough, Little Egg Harbor Twp., Long Beach Twp., Manchester Twp., Ocean Gate Borough, Ocean Township, Pine Beach Borough, Plumstead Twp., Seaside Park Borough, Ship Bottom Borough, Stafford Twp., Surf City Borough and Tuckerton Borough).

DISTRICT FOURTEEN: **Part of Hudson County** (Bayonne City, Guttenberg Town, Harrison Town, Hoboken City, Jersey City, Part of Kearny Town, North Bergen Twp., Union City, Weehawken Twp. and West New York Town).

Published by: **ELECTION DIVISION, NEW JERSEY DEPARTMENT OF STATE**
CN 304 Trenton, New Jersey 08625

January 1987

REFERENCE NO. 3

EPA Notification of Hazardous Waste Site

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

81068 NJS 000 001 312

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: CELOTEX CORPORATION
Street: MARKET & HERBERT STS
City: PERTH AMBOY State: N.J. Zip Code: 08862

B Site Location:
Enter the common name (if known) and actual location of the site.

Name of Site: CELOTEX CORPORATION
Street: MARKET & HERBERT STS.
City: PERTH AMBOY County: MIDDLESEX State: N.J. Zip Code: 08862

NJT000003756

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): ANDROWSKI, DONALD
Phone: 201-826-6881

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): 1972 To (Year): 1975

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☒ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☐ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☒ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary Refuse
15. ☐ Photofinish
16. ☐ Lab Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Form Approved
OMB No. 2060-0138

EPA Notification of Hazardous Waste Site

United States Environmental Protection Agency Washington DC 20460

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

8106.9 NJS 000 001 209

A Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: NL Industries, Inc.
Street: P. O. Box 1090 (Wyckoff Mills Rd.)
City: Hightstown State: NJ Zip Code: 08520

B Site Location:
Enter the common name (if known) and actual location of the site.

980530182

Name of Site: United Lead Co.
Street: Market & Herbert Sts.
City: Perth Amboy County: MIDDLESEX State: NJ Zip Code: 08861

C Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): BASER, F. R. ~~F. R. Baser~~, Dir. Environmental Control; RODMAN, H. G. ~~H. C. Rodman~~, Environmental Engineer
Phone: 609/443-2411 or 2410

D Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

From (Year): ~~Unknown~~ To (Year): ~~Pre~~ 1948

E Waste Type: Choose the option you prefer to complete

Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☒ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☒ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☐ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☒ Other (Specify)

(Mfg. Lead-Lined Valves) 400

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

Form Approved
OMB No. 2000-0138

REFERENCE NO. 4

CELOTEX
HERBERT AND MARKET STREETS
PERTH AMBOY, MIDDLESEX COUNTY
NJD 055930549

The Celotex Corporation, a Jim Walter Co. of Tampa Florida, operates a roofing product production facility and has a closed landfill in Perth Amboy, Middlesex County. The production area occupies a four acre site at the northwest corner of Herbert and Market Streets. On the southeast corner Celotex maintains a former landfill on a 26 acre parcel.

The Celotex Corporation manufactures roofing felts and asphalt roofing products. The company has had perhaps twenty different product manufacturing operations including asbestos siding and paints. The overall production was reduced by half in November of 1985 when the papermill and organic asphalt operation for the production of roofing felts was discontinued due to a change in technology and product demand. Fiberglass is replacing organic asphalt in the roofing industry, consequently by 1986 over 85% of the plants production capacity has coverted to production of fiberglass products.

The production facility has three wastewater discharges regulated by NJPDES permit # 0050750. The 001 discharge carries stormwater runoff by pipe underneath the landfill to the Raritan River. The 002 discharge containing stormwater and boiler blowdown is retained in a collection pit. This water is largely recycled, any overflow is discharged into the river. Neither the 001 or 002 discharges are treated. The 003 discharge of contact cooling water undergoes clarification by physical screening of sand and solid grit, and is discharged to the Perth Amboy sewerage treatment plant. According to the Perth Amboy Sewerage Authorities any effluent quality problems experienced in the past were attributable to the now defunct paper production facility. A NJPDES evaluation inspection of March 1987 determined the conditions were unacceptable due to stormwater intrusion into the 003 discharge and the lack of an operator for the clarifier.

The plant has 15 permits for air pollution dust collecters, scrubbers and exhaust systems. They also have a history of non-compliance. In 1975 the EPA ordered the cessation of an asbestos-paint manufacturing operation until pollution control equipment was installed. EPA investigators observed company employees engaged in procedures resulting in the generation of dense clouds of asbestos dust which were emitted to the outside air.

On the property between the landfill and the production facility Celotex stores approximately 100 waste oil drums for recycling and has a drum crushing operation. Poor housekeeping practices resulted in repeated oil spills here and around a group of waste oil tanks in the same area. A large spill in March of 1980 was cleaned up by Coastal Services.

The company reports generating about 300 tons per month of solid waste. Today solid waste thrown in a pit outside the processing unit where it is periodically picked-up by Metro Disposal of Keasbey, N.J.

Celotex operated the landfill for about 30 years. The waste consisted primarily of roofing shingles and asphalt along with waste from daily plant operations. In the past the DEP cited the company on numerous occasions for poor housekeeping at the landfill. In June 1981 a fire at the landfill exposed asbestos but the company didn't report the situation to the DEP. The Department issued Notices of Prosecution on July 15, 1981, and May 12, 1982, for extending the landfill operation outside of the area in the engineering design. An Administrative Consent Order in the summer of 1982 closed the landfill to further waste acceptance, and required closure of the facility.

The landfill is regulated by NJPDES permit for discharge to groundwater. Samples from the monitoring wells reveal high levels of asbestos, lead, iron, ammonia, ~~COD and BOD.~~ The landfill is located on the north bank of the Raritan River near the bay. The soil at the Celotex property consists of quaternary age alluvium and morainal deposits from the Wisconsin Glaciation underlain by the Raritan-Magothy Formation. The depth to groundwater under the landfill varies from 1-15 feet and the direction of flow is south, therefore contaminants from the landfill observed in the groundwater are no doubt reaching the Raritan River and Bay.

The population of the greater Perth Amboy area is approximately 40,000. There are private residences and a school within 0.25 miles of the site. The landfill is capped and the entire company facility is fenced and patrolled on all sides save that facing the Raritan River. There are no drinking water sources within miles of the site and those utilize a deep aquifer. The Raritan is extensively utilized for recreational purposes but it is a well established fact that it is polluted.

The landfill discharge to groundwater is clearly and consistantly out of compliance with the guidlines set out by the NJPDES permit. The permit is due for reevaluation in the fall of 1987 and should be referred to enforcement by the Division of Water Resources. The NJDEP is presently aware of the situation at the landfill but no course of action has yet been determined.

Submitted by:

Dennis Gray
HSMS IV
Bureau of Planning and Assessment
August 31, 1987

Preliminary Assessment

Celotex (A)
Market and Herbert Sts.
Perth Amboy, Middlesex County, NJ

NJD055930549

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJD	055930549

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Celotex Corp (A)	Herbert & Market Streets

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Perth Amboy	NJ	08862	Middlesex		

09 COORDINATES LATITUDE	LONGITUDE	
40° 31' 36"	74° 16' 08"	Lot #1 Block #88.1 & #89.1 + 3

10 DIRECTIONS TO SITE

From NJ Turnpike Exit 10 take Rt. 440 East. After approx. 2 miles take Smith Ave Exit. Follow Smith Ave. East for two miles. Turn right onto Herbert St. Celotex is on Northwest and southeast corners of Herbert and Market Sts.

III. RESPONSIBLE PARTIES

01 OWNER	02 STREET
Jim Walter Corporation	P.O. Box 22601, 1500 North Dale Mabry

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Tampa	Fla	33622	(813) 871-4223

07 OPERATOR	08 STREET
Celotex Corporation	Herbert & Market Sts.

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Perth Amboy	NJ	08862	(201) 826-6881

13 TYPE OF OWNERSHIP (Check one)

☒ A. PRIVATE ☐ B. FEDERAL _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER _____ (Specify) ☐ G. UNKNOWN

14 OTHER OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED _____ (Month Day Year) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED _____ (Month Day Year) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 4 29 86 (Month Day Year)
☐ NO

07 (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)

☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1946 (Beginning Year) | Present (Ending Year) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Asbestos and lead have reached the groundwater beneath the landfill. Petroleum spills have taken place at the production facility.

Ref. II, V, VI

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Hazardous substances in the landfill quickly find their way into the Raritan River and Bay. The Raritan is an important estuarine environment, serving as nursury for many commercially valuable species; there is also a great deal of recreational use of the river.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Characterization and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☒ B. MEDIUM (Inspection required) ☐ C. LOW (Inspection as time permits) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Helen Capone	NJDEP-BGWQM	609 292-0424

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Dennis Gray	NJDEP	BPA	609 292-4206	8 28 87 (Month Day Year)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJD	055930549

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- A. SOLID
- B. POWDER, FINES
- C. SLUDGE
- D. SLURRY
- E. LIQUID
- F. GAS
- ☒ G. OTHER Leachate (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS Unknown
CUBIC YARDS Unknown
NO. OF DRUMS Unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- B. CORROSIVE
- C. RADIOACTIVE
- ☒ D. PERSISTENT
- E. SOLUBLE
- F. INFECTIOUS
- G. FLAMMABLE
- H. IGNITABLE
- I. HIGHLY VOLATILE
- J. EXPLOSIVE
- K. REACTIVE
- L. INCOMPATIBLE
- M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			The landfill was in operation 30+ years.
SOL	SOLVENTS			Approximately 300 tons of bulky waste was
PSD	PESTICIDES			landfilled monthly. The percentage of
OCC	OTHER ORGANIC CHEMICALS			potentially hazardous substances is not
CC	INORGANIC CHEMICALS			known.
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently used CAS numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Asbestos	1332214	Contamination in	3.4 - 176	Mil. Fibers/L
MES	Lead	7439-92-1	landfill monitoring	0.1 - 0.44	Mg/L
			wells		

V. FEEDSTOCKS (See Appendix for CAS numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJD	055930549

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [X] OBSERVED (DATE 6/26/86) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Groundwater samples beneath the site contain a number of environmental contaminants. Due to extensive contamination throughout the area the extent of Celotex and its predesessor, United Lead's culpability is difficult to ascertain.

Ref. I, II

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [X] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

There are two untreated stormwater discharges from the production facility to the Raritan River. Groundwater flow in the area is, southerly, discharging into the Raritan River. Contaminants from the landfill leachate or on site spills will be quickly introduced into the River. Ref. I, II, V, VI

01 [X] C. CONTAMINATION OF AIR — 02 [X] OBSERVED (DATE 5/13/75) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

A fire in 1981 exposed landfilled asbestos to the air, the landfill is presently capped and inactive. The production facility has been cited on numerous occasions for violations. In 1975 the EPA ordered a halt to asbestos paint production that resulted in hazardous emissions of asbestos into the air. Ref. III, V

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

The fire and explosion hazard is slight. There has never been any entensive use of volatile or flammable substances in the production area, nor were any deposited in the landfill. The landfill is vented for methane gas produced in the landfill.

Ref. I, IV, V

[illegible] — [illegible] — [X] POTENTIAL — [illegible]
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

The production facility is fenced and patrolled by company personnel. The landfill is capped and fenced on all sides except that facing the Raritan River. The danger of direct contact is relatively slight.

Ref. I, IV, V

01 [X] F. CONTAMINATION OF SOIL — 02 [X] OBSERVED (DATE: 3/7/80) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Oil spills were noted at the plant in the area of a drum crushing operation. Monitoring well results suggest that there may be significant lead and asbestos contamination in the landfill.

Ref. II, IV, V

01 [ ] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

Contaminants from the site once reaching the surficial aquifer will for the most part be transported a short distance to the Raritan River. There are no drinking wells within eight miles of the site, and those wells tap a deep aquifer.

Ref. I, IV

01 [X] H. WORKER EXPOSURE/INJURY — 02 [X] OBSERVED (DATE 5/13/75) — [ ] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION — Ref. I, III, V

The landfill is capped and is not in use. Presently danger of worker exposure is slight. Past operational activities exposed unprotected workers to asbestos. A fire at the landfill exposed asbestos to unprotected workers restoring the cover.

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Due to the landfill cap and the security enforcement the most probable vector of population exposure to contaminants originating from the Celotex property is via exposure to the already contaminated Raritan River.

Ref. I, V

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJD	059930549

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ J DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION — Ref. I, II, VI

Numerous environmental contaminants from the landfill are probably reaching the Raritan River and Bay via the groundwater. Along with toxic substances such as lead and asbestos deleterious levels of ammonia, COD & BOD are attributable to the landfill.

01 ☒ K DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION — Ref. I, II, IV, V, VI

Contaminants in the landfill leachate have deleterious affects on animal life. Some of the wastes are physically toxic such as lead, iron and asbestos; others, such as ammonia, COD & BOD will adversely affect the environment in which they live.

01 ☒ L CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

The landfill leachate contains substances which may via bioaccumulation disturb the food chain. Some contaminants may have adverse affects upon only certain trophic levels and thereby harm the food chain. Ref. II

01 ☒ M UNSTABLE CONTAINMENT OF WASTES — 02 ☒ OBSERVED (DATE: 6/5/86, 8/80, 6/75)

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION — Ref. II, III, V, VI

The observation of groundwater contamination by the landfill, oil spills on the plant facility and air pollution violations are all examples of unstable waste containment.

01 ☒ N DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☒ ALLEGED

04 NARRATIVE DESCRIPTION

Contamination from the landfill has no doubt been transported to the Raritan River and Bay by the groundwater which discharges into the River close to the landfill site. Ref. I, II, V

01 ☒ O CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☒ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

The production facility's 003 discharge is contact cooling water that undergoes minimal clarification before being discharged to the Perth Amboy STP. Celotex has been cited for allowing stormwater intrusion into the discharge. Ref. II, VI

01 ☒ P ILLEGAL/UNAUTHORIZED DUMPING — 02 ☒ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

During the period in which the landfill was operational Celotex was cited on a number of occasions for unauthorized dumping. There were is also documentation of spills at the production facility. Ref. V, VI

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

The leachate from the landfill has been consistantly out of the bounds for lead, and asbestos established by NJPDES permit. The permit expires Sept. 30, 1987; at that time the Division of Water Resources will decide if more analytical data is needed or if the case should be turned over to the DEP enforcement element.

V. SOURCES OF INFORMATION

Map A.	USGS, South Amboy Quad	I.	a, b SWA 1216A; c, d, e, BGWQM File
B.	Middlesex Co. Hagstrom Co.	II.	a, b, c DWR Central File; d, BGWQM
C.	Perth Amboy Tax Map	III.	Air Pollution File 15127
D.	NUS Site Inspection Map	IV.	BPA File
		V.	SWA 1216A
E.	SWA Case 1216A Site Inspection Map	VI.	DRW Central File

EPA FORM 2070-12 (7-81)

REFERENCE NO. 5

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
02-9001-10	August 28, 1990	11:45 A.M.

DISTRIBUTION:

File - Celotex (A)

BETWEEN:	OF:	PHONE:
Mark Rudman	Celotex	(201)826-6331

AND: Bob Cantagallo (NUS)

DISCUSSION:

I asked Mr. Rudman about the drums stored on site, he told me that Celotex recently had quite a few removed and they were trying to get away from drum storage, so he could not say how many were on site. When asked what the drums contained, Mr. Rudman stated "boilerroom chemicals" and could not specify.

Mr. Rudman informed me that the landfill had not yet met closure requirements (after I asked him if the landfill was capped and vented), so I took this to mean that the landfill was not capped and vented. He said he would fax NUS the list of Celotex's air permits, and a list of parameters that the OOI discharge is (P.C.) regulated for, as well as compliance limits for the same. He stated that the parameters sampled and regulated for the well were not the same as those for the OOI discharge.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 6

NUS CORPORATION

II

0536

CELOTEX (A)
02-9001-10
TDD MANAGER-M. COLER
LOGBOOK #0536
FEBRUARY 7, 1990

C-554-5-56-125

GUIDANCE FOR PROPER USE OF LOG BOOKS

Purpose

- Serves to document onsite activities and be understandable to an outside reader.
- Provides the basis for later written reports.
- Used an an evidentiary document and may be used in legal proceedings.

Distribution

- Controlled by the project manager and distributed as appropriate to personnel designated by the project manager.

General Procedures

- Record information in language which is objective and factual.
- Use ink. Waterproof ink is recommended.
- Leave first two pages blank. They serve as space for the table of contents to be added when the log book is complete.
- The first written page identifies the date, time, TDD number, site name, location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- Start on a new page at the start of each day's field activities. This page should identify date, time, TDD number, site name and location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- List all persons leaving or entering the site.
- Information recorded in the log book should be in chronological order.
- Sign and date each page, log all entries using a 24 hour clock. Entries should be time logged every 15 to 30 minutes.
- Corrections are to be lined through and initialed. No erroneous notes are to be made illegible.
- Include a sketch or map of the site which can be used to locate photo or sample locations. Note landmarks, indicate north, and if possible include an approximate scale. Include as many sketches and maps as necessary.
- A person not present when field activities were being documented should read each completed page, and countersign and date when satisfied that the written notes are understandable.

Specific Field Activities To Be Documented

- Record the who, what and where of field activities.
- Indicate sampling and photo locations on a site sketch or map.
- As part of the chain of custody procedure, recorded-in-situ sampling information must include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, and any preservative used.
- Information for in-situ measurements must include a sample ID number, the date, time, and personnel taking measurements. Pertinent in-situ measurements include but are not limited to pH, temperature, conductivity, flow measurements, continuous air monitoring measurements, and stack gas analysis. If infield calculations are necessary they must be checked and signed by a second team member.
- Create a photo log to document photos taken in the field. These must include date, time, photographer, sample number, roll number, frame number, photo ID number and description. Indicate if the film is for slides or prints in the column for roll number. Photo ID numbers can be added at the time the photo log is assembled.
- Record onsite health and safety measures used. Describe observed potential hazards to health and safety. Document the level of protection used, decontamination procedure used and specific decontamination solutions.
- When sampling is complete, a summary log is to be completed. It must include date, time, sample number, description, field book reference page, and the number and date of the chain of custody from on which the sample is listed. Indicate whether or not the sample was split.
- Record details regarding relevant information obtained during onsite interviews. Include names of persons interviewed, the interest group represented, their address and phone number.
- Record any other relevant information which would be difficult to generate at a later date.

Celotex (A)

02-9001-10

Celotex (A)
Herbert + Market Sts
Perth Amboy, NJ

March 13, 1990

02-9001-10
3/13/90

TABLE OF CONTENTS

ON-SITE RECONNAISSANCE p. 3

Photolog for Recon p. 12

SITE INSPECTION p. 15

Photolog for site inspection p. 37

Mary-Ann 3-13-90

Cellotex (A)
Herbert + Market Sts.
Perth Amboy, NJ

02-9001-10
3/13/90

ON-SITE RECONNAISSANCE
March 13, 1990

IWS Personnel On-site:

Maria Coler - SM - Maria Coler 3-13-90
Greg Pollack - H+S - Greg Pollack 3/13/90
Bob Carson - Surveillance - Bob Carson 3/13/90
Rich Settino - support - Richard Settino 3-13-90

The above personnel have read and understand the work plan and QA/QC procedures.

Equipment Numbers:

Cameras (2) — (prints) # 469776
— (slides) # 469772

HNu - # 307146 probe - # 307139

OVA - # 307137

Mini Rad - # 469785

Debbie Scott 4/25/90

Maria Coler 3-13-90

Celotex (A)

02-9001-10
3-13-90

Equipment Background Readings:

HNU — 0
OVA — 0
MiniRad — 12 counts/min

Weather Conditions: 1130 sunny, warm 74°F,
rel. hum 55%
barom 30.05"
winds SW 6 mi/hr

1100 - met with site contacts: Ed Reddy, Mark Rudman, Lecil Colburn
- consistent monitoring since '86
- no monitoring equipment used when opening wells, Colburn said would make copies of monitoring results

1123 - Rudman and ~~Reddy~~ Colburn m 3-13-90 directed us to our place for the decon pad

1137 - Colburn requested copies of photographs

1141 - cap doesn't meet closure plan requirements, not properly graded, property transfer not worked out, any cover is part of landfill maintenance

1145 - health + safety meeting given by Pollock

Marta [signature] 3/5/90

Debbie Jah 4/25/90

Cortex (A) 02-9001-10 3-13-90

1221

1223

1227

pictures taken at → 1231

1231: ~~1P-4/S4~~, 1P-5, S5, 1P-6, S6, 1P-7, S7

4-24-90, MC

1235

P

1240

[illegible] 4/25/90 Maria Oler 4-25-90

1215 finished prep, start to walk to landfill

foam insulation scattered near access gates
- bought RR property 2 or 3 years ago

1223 - Colbrin told me Hess oil had a spill - ~~haven~~ 3-13-90 he wasn't sure if they finished cleanup

- took pictures near edge of landfill
① looking at access road (up), 1-P1/S1 facing south
② looking down access road, 1-P2/S2
③ looking at face of landfill near bank of river, 1-P3/S3

1227 - took picture of N bank of river - oil slick, 1P-4/S4

1231 - took pictures of 001 outfall pipe
Colburn said that he didn't know why effluent looked gunky
→ blockade - made out of "tissue paper" + fence - Colburn said that Celotex asked Hess to put it up
→ Colburn said that they had skimmers in the water

1235 - Colburn showed me spot where there was a fire within last 2 to 3 weeks supposedly started by kids on dirt bikes
P858 - took picture
- no air readings above background on HNU, OVA, and minirad

1240 - remnants of roofing material exposed - ~~near~~ bank of river

Debbie [illegible] 4/25/90 MC 3-13-90 on side

Maria Coler 3-13-90

Celotex (A) 02-9001-10 3-13-90

1-

124

124

3-23-90 M

48 P959 took picture of Carson and Sethne → ~~124~~
opening MW4

1250

1254

1256

1257

1258 Co

1300

1302

1304

Mabh 3 [signature] 4/25/90 Martin Coler 4-24-90

4-24-90 P13513 ~ 1305 - photo of Landfill near MW3, facing North.

Celotex (A) 02-9001-10 3-13-90

6

1241 on air - Carson and Settino
- opening monitoring well #4
- using ammonia draeger tubes
1243 - no readings of HNU, OVA above background
1247 - no ammonia on draeger
3-23-90 MC tube test
~~1248 - took picture of Carson + Settino opening well~~
1250 depth to H_2O to top of casing
8' 4"

" " " to ground surface
5' 8" ±

1254 closed MW4 - off air

1256 - stray spots where roofing felt exposed

1257 P10S10 P11S11 took pictures of exposed roofing felt

1258 Colburn said in closure plan slope of landfill had to be addressed, waiting for a waterfront permit

1300 - drum exposed on ~~north~~ south MC 3-13-90 face of landfill + roofing material
1302 P12S12 took picture of exposed drum
1304 - Carson and Settino on air, ready to open MW ~~2~~ 3 3-13-90 MC
- came upon flat open space where another fire occurred w/ in the last month, at same location as MW ~~2~~ 3

Debbie S [illegible] 4/25/90 Maria Coler 3-13-90

Celotex(A) 02-4001-10 3-13-90

P14514

4/24/90 1309

photo of Carson and Settino
on air, opening MW5

Deborah Sw 4/25/90

Maria Oaler 4/24/90

Celotex (A) 02-9001-10 3-13-90

1308 - no air readings above background from initially opening well ON HNu, OVA AND MINIRAD

1310 - no readings when opened well above background on HNu, OVA and minirad
3.75 ft to top of casing
10" below ground surface

- typically there is ponding in area where fire occurred

1312 - closed well, off air

1314 30 - minirad count - 12
to 1315

1316 - ash from fire blowing around
1317 P15515 took picture of burnt east face of fill
1318 - Colburn said doesn't know who put out fire

1319 - Colburn doesn't know what's in drum - maybe nothing rags, (trash) etc.

1322 - going on air to open MW 2
Carson and Sethne MC 4-24-90

1323 - drums exposed on east side of fill near MW2
- open end of one drum exposed

- no air readings above background before and after well casing opened ON HNu, OVA or MINIRAD
3.5 ft. to top of casing
1" below ground surface

Bobb-SW 4/25/90

Mark Carter 3-13-90

- Celotex (A) 02-4001-10 3-13-90

1325 - off air, closed monitoring well
1334 P16 & 16 on top of landfill
picture facing east of
burnt out section

1337 - dead rabbit on top of landfill

1339 - some material exposed on top
of fill - plastic stream on top

1340 - on top of landfill - maybe
part of landfill - part of
closure plan - remnants
of above ground RR ~~bridge~~ bridge 3-13-90 MC

1343 - stream at bottom of east face of landfill, Colburn claims takes
street drainage, they don't
discharge into - discolored water -
orange - feeds wetlands by
monitoring well 3
- no fence down by ravine
1345 P17 & 17 took picture of stream,
~~facing~~ MC 3-13-90 on east face
of landfill, facing south

1348 - pit - scheduled as part
of landfill to be used
before closure, ponding, reveals
how thick cap is
- whatever is left over from final contouring going in pit
1350 P18 & 18 picture, facing east, of pit

1355 - buckets stream - on NE ~~face~~ MC 3-3-90
face of landfill
near building - not theirs,
Delab JW 4/25/90 buckets not theirs M. Coler 3-13-90

Celotex (A) 02-9001-10 3-13-90

~ 1420 P21 photo of access gate MC 4-24-90

~ 1430 P22 photo of debris along fence
~ 1432 P23 photo of debris and ~~of~~ MC tanks, facing north

Debbie SW 4/25/90

Maria Coler 4-24-90

Celotex (A) 02-9001-10 3-13-90 9

1357 - on air for MW # 5

1358 P19519 picture of inlet for discharge pipe under landfill

1400 - no air readings above background w/ out cap cracked
1402 - no air readings above background w/ cap cracked
ON HNU OVA or minirad

11.5' to top of casing
8'11" below ground surface

1404 Colburn says that there is naturally occurring asbestos in water in this area
1405 off air, monitoring well closed
1407 - abandoned tank car near gate
P20520 - took picture

1409 - ECLA cleanup - stockpiled on plastic, on top of landfill

1412 - slide camera malfunctioned on picture 21

1418 - HNU not working

1427 drum storage - don't exactly know contents of drums - Radmas

1436 - on air for MW # 1
- screening w/ a xylene dragger tube, OVA and HNU not working

Debbie 4/25/90 M. [illegible] 3-13-90

Celotex (A) 02-9001-10 3-13-90

1438 - no reading on draeger tube

1439 Mark Rudman said trying to get away from drums when I asked about their drum crushing operation - he said that they don't have one any more

1442 20'8" to top of casing
18' to ground surface

1443 off air

1449 - left ~~#5~~ #1 MC 4-24-90

1454 - started decon, used alconex + H_2O

1503 - finished decon, disposed of decon H_2O on site - witnessed by Colburn

1510 - Lecil Colburn gave me his address to mail copies of photos

P.O. BOX 31075
TAMPA, FLA.

1515 - signed out at entrance to facility

1516 - left facility

Deleh S W 4/25/90

Maria Coler 3-13-90

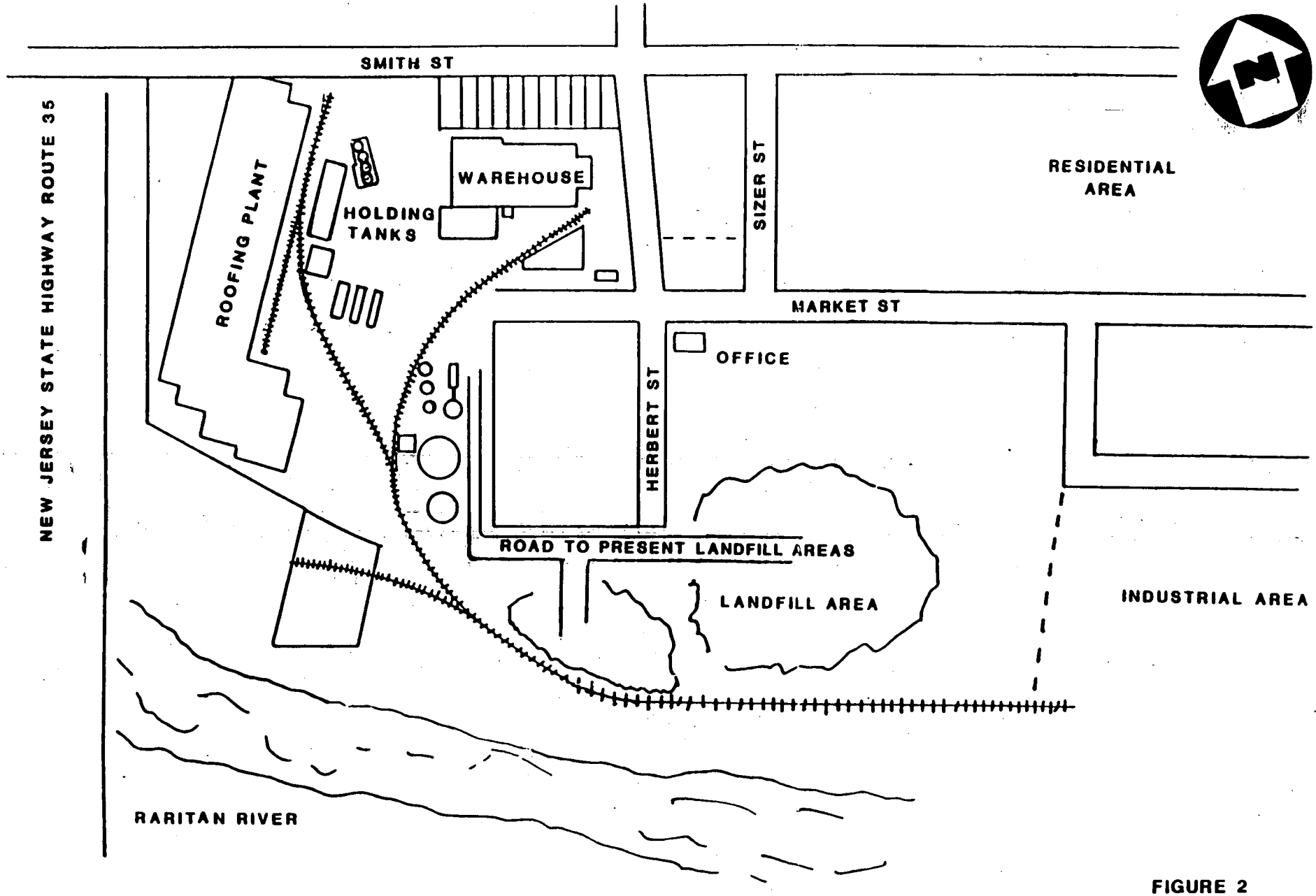


FIGURE 2

SITE MAP

CELOTEX (A), PERTH AMBOY, N.J.

NOT TO SCALE

NUS CORPORATION

Celotex (A) 02-9001-10 3-13-90

Photograph Log
- all photos taken by Maria Cder

Photo Number	Description	Time
~~1-P1~~/S1	photo of access road, facing west	1223
~~1-P2~~/S2	photo of south face of landfill, facing north	1223
MC 4/24/90 ~~1-P1~~ P3/S3	photo of access road, on south face of landfill, facing east	1223
1-P4/S4	photo of oil slick on north bank of Raritan River	1227
1-P5/S5	photo of 001 permitted outfall pipe on north bank of Raritan River, facing down	1231
1-P6/S6	photo of 001 permitted outfall pipe on north bank of Raritan River, facing North	1231
1-P7/S7	photo of effluent from 001 permitted outfall pipe	1231
1-P8/S8	photo of south face of landfill where fire occurred	1235
1-P9/S9	photo of B. Carson and R. Settino opening monitoring well 4	1248

[illegible] 4/25/90 4-24-90 Maria Cder

Celotex (A) 02-9001-10 3-13-90

Photo Log (continued)

Photo Number	Description	Time
1-P10		
~~1-P10~~/S10	photo of exposed roofing felt on south face of landfill, facing north, in vicinity where fire occurred	1257
1-P11/S11	photo of exposed roofing felt on south face of landfill, facing north	1257
1-P12/S12	photo of exposed drum on south face of landfill, facing north	1302
1-P13/S13	photo of area on landfill where fire occurred, near monitoring well 3, facing north	1305
1-P14/S14	photo of B. Carson and R. Sutton in air, opening monitoring well 3	1309
1-P15/S15	photo of east face of landfill, facing southwest, in area where fire occurred	1317
1-P16/S16	photo from on top of landfill, facing east, of area where fire occurred	1334
1-P17/S17	photo of creek on east face of landfill, facing south	1345

Celotex (A) 02-9001-10 3-13-90

Photo Log (continued)

Photo Number	Description	Time
1P-18/S-18	photo of pit on north side of landfill, facing east	1350
1-P19/S-19	photo of catch basin for 001 permitted discharge	1358
1-P20/S-20	photo of abandoned tank car along fence, near access gate	1407
1-P21 *	photo of access gate, facing southeast	1420
1-P22 *	photo of debris along fence, facing east	1430
1-P23 *	photo of debris and tanks, facing north	1432

* slide camera malfunctioned at 1412

[illegible] 4/25/90 4-24-90 [illegible]

Cilotex (A)
Herbert and Market Streets
Perth Amboy, New Jersey

SITE INSPECTION
April 26, 1990

NUS Personnel On-Site:

SM	Maria	Coler	MC	4/26/90
H+S	Laura	La Forge	LLF	4-26-90
SMO	John	Harrison	[illegible]	4/26/90
ASM	Glenn	Calabrese	GAC	4/26/90
Sampler	Angie	Bonilla-Perez	AB	4/26/90
Sampler	Joanne	Torchia	JT	4/26/90
Sampler	Dave	Benfer	DB	4/26/90
Sampler	Mike	Gallagher	MG	4/26/90
Support	Matt	Meldrin	MM	4-26-90

The above personnel have read and understand the work plan and QA/QC procedures.

Equipment Numbers:

Cameras prints 469774
slides 469756

Glenn's { prints 469776
slides 469770

HNU M-469749 (Glenn)
HNU L-469748
OVA A-469758 (Glenn)
OVA J-469759
Minirad - ~~10 counts~~ 469785

SCBA - Benfer 192083
SCBA - Gallagher 192040
SCBA - La Forge 307174 (Back up)
Conductivity pen # 629776

D. [illegible] 5-7-90 Maria Coler 4/26/90

Celotex (A) 02-9001-10 4/26/90 16

Equipment Background Readings time - 940

OVA - Ø ppm
HNu - Ø ppm
Minirad - 10 counts/min

Note: I, Maria Coler, have transferred a logbook (#0569) to Glenn Calabrese for field documentation.

Weather Conditions

- approximately 70° F, sunny, light breeze from the NE

Note: Two sampling crews will be on site. Glenn Calabrese will by the ASM for the SW/SED samples. Maria Coler will be the general site manager and will lead the sampling crew for the GW and soil samples

850 → arrived on site. met with Reed Colburn from Celotex and Sam Nesco and Mark Seither from North Eastern Analytical Services - North Eastern is the contractor that does the testing for the NJPDES monitoring.

- asbestos lined tanks located opposite the decon pad, asbestos is broken apart

Note: all samples will be split, not including rinsates and dups

D. LaNuel 5-7-90

Mari Coler 4/26/90

4-26-90 Celotex (A) 02-9001-10

Harrison gave trip blanks to Coler →
MC 4/9/90

Mars - Cler

Celotex (A) 02-9001-10 4/26/90 17

925 Laura LaForge holding SSO meeting
sampling crew suiting up in saranex, gloves and booties (and hardhats + safety glasses)
1000 decon of equipment started

1010 still deconing
camera 469756 not working, I took over one of Glenn's cameras (# 469770)
- Harrison collecting rinsates

1015 Glenn and Maria went on a recon with Calburn, Reddy and Nisco to determine sampling locations. We walked along the fence to the location of the catch basin for the 001 discharge. We determined that no ~~sediment~~ 4-26-90 surface water samples would be taken
- left location of catch basin, walking toward 001 discharge pipe

1030 came upon location of 001 discharge pipe - determined that both surface water and sediment samples will be taken, left discharge pipe for ~~m~~ stream along east side of landfill

D. LaMund 5-7-90 Maria Oler 4-26-90

Celotex (A) 02-9001-10 4/26/90

Glenn's Logbook # - 0569
MC 5/4/9/90

MARK J. RIETHER
Sales Manager, Environmental Services

NAC

NORTHEASTERN ANALYTICAL CORPORATION

Environmental Analysis and Asbestos Services

Evesham Corporate Center
4 East Stow Road, Marlton, NJ 08053
(609) 985-8000 (800) NAC-5080
FAX (609) 985-9700

D. Lichard 5-7-90

Maria Pelz 4-26-90

4/26/90

Celotex (A) 02-9001-10 4/26/90 18

1042 - came upon marshy area, Colburn insisted on three SW/SED locations, instead of the two originally planned - the extra sample ~~was~~ will be taken near the point where the water from the marshy area enters the Raritan River; two other sample locations were agreed upon: - (refer to Glenn Calabrese's logbook for details)
→ one further upstream, in the creek
→ one upgradient, background

1055 - getting equipment ready to sample

1105 - Glenn Calabrese, Angie Perez, and Joanne Torchia left to sample
- Maria's group getting equip. ready to sample first two wells
- Lisa temporarily left vicinity of command post ~~after~~ 4-26-90 mc

1110 Mark Reither left the site, he gave me his card

Mark
5-7-90
7-90

Mary Ce
4/26/90

Celotex (A) 02-9001-10 4/26/90 19

checking SCBA's

1115 John Harrison ~~spillist~~ 4-26-90 MC broke bottle of NO_2 ~~on~~ 4-26-90 + cut his thumb -
Matt applied bandaid
- Glenn called command post - had 3ppm on OVA, ~~x~~ ∅ on HNU - La Forge recommended a methane test on the OVA
- Glenn called back in - readings were due to methane

1125 - carry equipment to location of GW1 sample, will take two trips

1140 - still carrying equipment - La Forge decided to downgrade from Level B to Level D because no readings were determined on recon

1155 - Maria's sampling team arrived at location for GW1 sample with remaining equipment
→ taking readings on well, no readings above background on HNU, OVA and mineral
→ setting up plastic around well

→ Glenn radioed in to verify location of SED1

[signature] 5-7-90 Maria [signature] 4-26-90

Celotex (A) 02-9001-10 4/26/90 20

1210 water depth - 8 ft from top of casing
17.5 ft - depth of well

- no readings on HNU, OVA and mini rad above background
- conductivity pen would not calibrate

1215 - purging well, pH between 5 and 6, well pumped dry
waiting for well to recharge
- Gallagher and Benfer back to command post for bailer

1230 - Started up ~~bailer~~ 4-30-90 bailing
Benfer, Gallagher back

- pH stay the same - between 5 and 6

- no readings above background on OVA, HNU and minirad

1240 - Lab Forge Spiking VOA bottles with HCL
- sampling for GW1 and GW5

D. LeMond
5-7-90

Maria Oler

Celotex (A) 02-9001-10 4/26/90

4-30-90 water in photo has oily sheen →
MC
4-30-90 on North bank of Raritan River →
MC

D. [illegible] 5-7-90
Mari-[illegible] 4-30-90

26/90

Celotex (A) 02-9001-10 4/26/90 21

1245 - took photo: 1-P1/S1 and
(1247) → 1P-2/S2 at location for
GW1 and GW5 (dup) sample
location, Benfer and
MC 5-6-90 ~~Meldrim~~ Gallagher sampling

1250 - no readings on HNU, OVA
and mineral above background

~~10~~
1305 - finished sampling GW1 (and GW5, dup)
- heading for location of
GW2 sample at MW3

1320 took photos
1P-3/S3 - of RR bridge facing south
Sheen → → 1P-4/S4 - of water in ~~stream~~ creek near location of SW4 sample
River → → 1P-5/S5 - of workers cleaning up, facing south
1P-6/S6 - of stream under RR bridge, ~~lead~~ MC 4-30-90
facing south, leading into Raritan River

1325 - depth to water at MW3
is 3.5 ft
depth to well 15.5 ft
→ no readings on HNU, OVA,
and mineral in breathing
zone
→ approximately 200 ppm near
well casing on OVA

~~11~~
1335 - readings on OVA down to zero
above background

[illegible] 5-7-90
[illegible] 4-30-90
D. [illegible] 5-7-90 Maria [illegible] 4/26/90

1345 - purging for GW2 sample
- pH 7.0
- waiting for well to recharge
- after purging a second time / reading on OVA ~ 3-5ppm

1355 - the OVA peaked on the X1 scale

1400 - Glenn's crew heading back to command post to drop off sample bottles and equipment from cleaned sample (SW4/EDX)
- Better + Gallagher on air to sample GW2
- La Forge spiking VOA bottles

1405 1-P7157 photo taken of location of GW2 of Better and Gallagher sampling MW3 on air

1410 - no readings on the HNU above background

1415 - boys seen fishing near location of SW4

[signature] 5-7-90 Maria Coler 4/26/90

Celotex (A) 02-9001-10 4/26/90 23

1420 Benper closed well
- purged sampling
- Benper + Gallagher off air

1425 at location for GW3 (MW2)
sample
- no readings above background
on OVA, HNu and minirad

1440 1P8/58 photo of ~~drum~~ MC 4/30/90
rusted drum near
location of MW2
- Collison said that
Celotex doesn't use drums
with plastic liner, therefore
not theirs

1445 - depth to water 3'
- depth of well 20.51

- no readings on OVA and
minirad above background
- HNu malfunctioned
- purged well dry

1450 - purging one more time

1505 - La Force spiking VOA bottles
- ~~Sta~~ Benper and Gallagher
start sampling on level D

D. LaMond 5-7-90 Maria Coler 4/26/90

Celotex (A) 02-9001-10 4/26/90

1512-1 - PG/SG - photo taken of Benfer and Gallagher sampling GW3

1525 - finished sampling for GW3 & reading for GW4
— walked over landfill

1540 - still heading toward location for GW4 sample
Matt transporting GW3 samples back to command post

1555 waiting on top of landfill for Benfer and Gallagher to return with truck - so that we can transport equipment

D. [illegible] 5-7-90 Maria Oler 4/26/90

Celotex(A) 02-9001-10 4-26-90

1610 - met with Benfer and Gallagher with the Suburban picking up equipment, heading toward location of SW3 to pick up samples from Glenn

1620 arrived at SW3 location to pick up samples from Glenn

1630 heading for command post

1635 arrived at command post

1645 both crews heading out
Glenn's crew to do SW2
Maria's crew to do GW4

1700 - Glenn's crew went to sample creek (SW 2)
- Maria's crew at ~~taking~~ GW4
ME 4/26/90
- no readings above background on HNU, OVA and mineral

1720 Glenn called me over to look at alleged leachate pit near (SW 2) sample

D. [illegible] 5-7-90 Maria Coler 4/26/90

4-26-90 Cloter (A) 02-9001-10

these photos comprise a panoramic view from parking lot to location of SW3/SED 4

MC 5 4/9/90

Mari-Cler 5 7 9-90

OC1 - 10

Alotex (A) 02-9001-10 4/26/90 26

location
- Colburn pointed out that about two weeks ago ~~they~~ MC 4-30-90 ~~built~~ the owners of the apt. building next door bulldozed what appears to be construction material near the drainage pipe to the creek where the SW2 sample being taken
- both HNUs malfunctioned
1730 Benfer + Gallagher measuring depth of well at GW4
→ depth of well → 29'
→ depth to H_2O → 20'
- Laforge + Coler over to look at alleged leachate pit
- no readings above background on OVA
1740 - took photos near pipe discharging into ~~stream~~ creek 4-30-90
1-P10/S10 - of children playing in neighboring apt. building's parking lot
1-P11/S11 - 1st sweep toward the creek from the apt. building
1-P12/S12 - 2nd sweep toward the creek

tos
view
9 lot
of
5 MC 4/9/90
5 MC 4-9-90

D. LaMarand 5-7-90 Maria Coler 4/26/90

Celotex (A) 02-9001-10 4/26/90 27

1745

1P-13/S-13 - photo of "leachate" pit, facing south

1P-14/S-14 - photo of stream from "leachate" pit entering creek, facing ~~each~~ east MC 4-30-90

1P-15/S-15 - photo of pile of debris facing north

1P16/S16 - closeup of "leachate" pit

1800 - purging MW1 (at GW4)
- pH at ~~6~~ 7
- pH down to 6
- purged well for 6 MINS.

1810 - starting to take GW4 sample
- La Farge putting acid in VOAS
- Glenn's crew back to MW1 location - finished sampling creek
- Glenn's crew going over to sample Sed 5
- Sed 5 will now become the dup

1820 MC 4-26-90
~~1825~~ - photo of Benfer & Gallagher
1-P17/S17 sampling for GW4 in level D

D. [illegible] 5-7-90

Maria [illegible] 4/26/90

Celotex (A) 02-9001-10 4/26/90

1840 – we decided not to ~~take~~ take SEDS sample today, will take SEDS tomorrow (4/27/90)

1900 sample coolers custody sealed and checked

D. [illegible] 5-7-90

[illegible] 4/26/90

4/26/90

Cibolex (A) 02-9001-10 4-26-90 28

MC 4-26-90
(continued)

1825 - SW2 80 oz amber broke, Glenn's crew going back to re-sample

1830 - finished sampling well

1845 - called Debbie Lamond to confirm plans

1855 - Lical agreed to allow us back tomorrow, we will do Sed5 (and Sed6 (dup) and all soil samples tomorrow

1900 - starting cleanup and decon
- John Harrison & Benfer left to Fed ex samples

1920 - packing equipment
- waiting for Harrison + Benfer

1945 - still waiting for Harrison + Benfer to return

1950 - Benfer + Harrison returned, loaded up and left site
- signed out at front gate

2005 - returned to office

4-30-90 to return a second day to complete sampling

5-7-90

5-7-90

Maria Coler 4/26/90

02 - 9001 - 10 4-~~26~~ 27 MC 4-27-90 -90

Celotex (A)
Herbert + Market Streets
Perth Amboy, New Jersey

Site Inspection
April 27, 1990

Nus Personnel On Site:

SM: Maria Coler - 4/27/90 MC
H+S: Debbie Lamond - 4-27-90 DL
SMO: John Harrison - 4-27-90 [illegible]
Sampler: Mike Gallagher - 4/27/90 [illegible]
Sampler: Matt Meldrim - 4-27-90 MJM

The above personnel have read and understand the work plan and QA/QC procedures.

Equipment Numbers:

Cameras
prints: 469774
slides: 469770

HNU A 192120
OVA F 307137 ← use first
D - NO EPA STICKER
Minirad - 469785

SCBA 192040
SCBA 192088
SCBA 307174
not used

D. [illegible] Mond
5-7-90

Mari Coler 4/27/90

Celotex (A) 02-9001-10 4/27/90 30

Equipment Background Readings time - 905
OVA - 6 units
HNU - MC 4/30/90 ~~.3~~ .4 units
minirad - 14 counts/MIN

Weather Conditions - approximately 70°, humid, sunny, breeze from the south

Note: Today, one sampling crew will be on site.

835 - Coler + Harrison arrived on site, met with Colburn. he instructed us to start setting up
~~Harrison collecting rinsates~~ 4/27/90
955 - still setting up
- Lamond, Meldrim and Gallagher arrived on site

915 - Starting decon procedures
- Lecil and Dgn on site overseeing our procedures

935 - still deconing
- Harrison collecting rinsates
955 - packing up equipment
- ~~going to had SED5 + SED6~~ MC 4/27/90

Note: samples will be split (duplicates and rinsates will not be taken)

D. LaMarand 5-7-90 Maria Coler 4/27/90

02-9001-10 Celotex (A) 4/27/90

1015 - Lamond giving safety meeting

1025 - heading to location for SED5, SED6 near mw 5

1030 - arrived ~~on~~ MC 4-27-90 at location for SED5
- Gallagher + Meldrin donning cartridge masks
- no readings on OVA, or HNU and mineral above background, in breathing zone
- location of SED5 & SE6 6 is east of MW5, in catchbasin (surrounded by cement enclosure) 4-30-90
- reading on OVA a min. of 600 u in ~~breathing~~ sampling zone MC 4-30-90
- nothing above background on HNU in sampling zone

1040
2P1/S1 - photo of Gallagher and Meldrin taking SED5, in catch basin, east of MW5

1042
2-P2/S2 - photo of Meldrin and Gallagher collecting SED6, in catch basin, east of MW5

1100 - still taking SED5/SED6 sample
- 10 units on OVA near sampling media
- nothing above background on HNU near sampling media —

1105 Ed Reddy told Lamond that a
4-27-90 MC ~~drum crushing~~ operation exists
tank truck cleaning, name of co. - Janin

D. LaMond 5-7-90 Mari - Oler 4/27/90

4/27/90 Celotex (A) 02-9001 - 10

5/9/90 MC

~~1240~~ - asphalt roofing material
1201 in soil collected for S1 →

D. [illegible] 5-7-90

Mari - [illegible] 4/27/90

-10

02-9001-10 Celotex (A) 4/27/90

next door, directly NE of catch basin

1110 - finish sampling for SED5, SED6
- heading back to command post
- cartridge masks off

1112 - 2-P3/S3 - photo of tank cleaning co., facing northeast from location of SED5/SED6

1120 - deconing sample bottles for SED5, SED6

1135 - heading toward ~~for~~ S1 soil location

1145 - on top of landfill, on the north side, near the south slope, looking for a sampling location

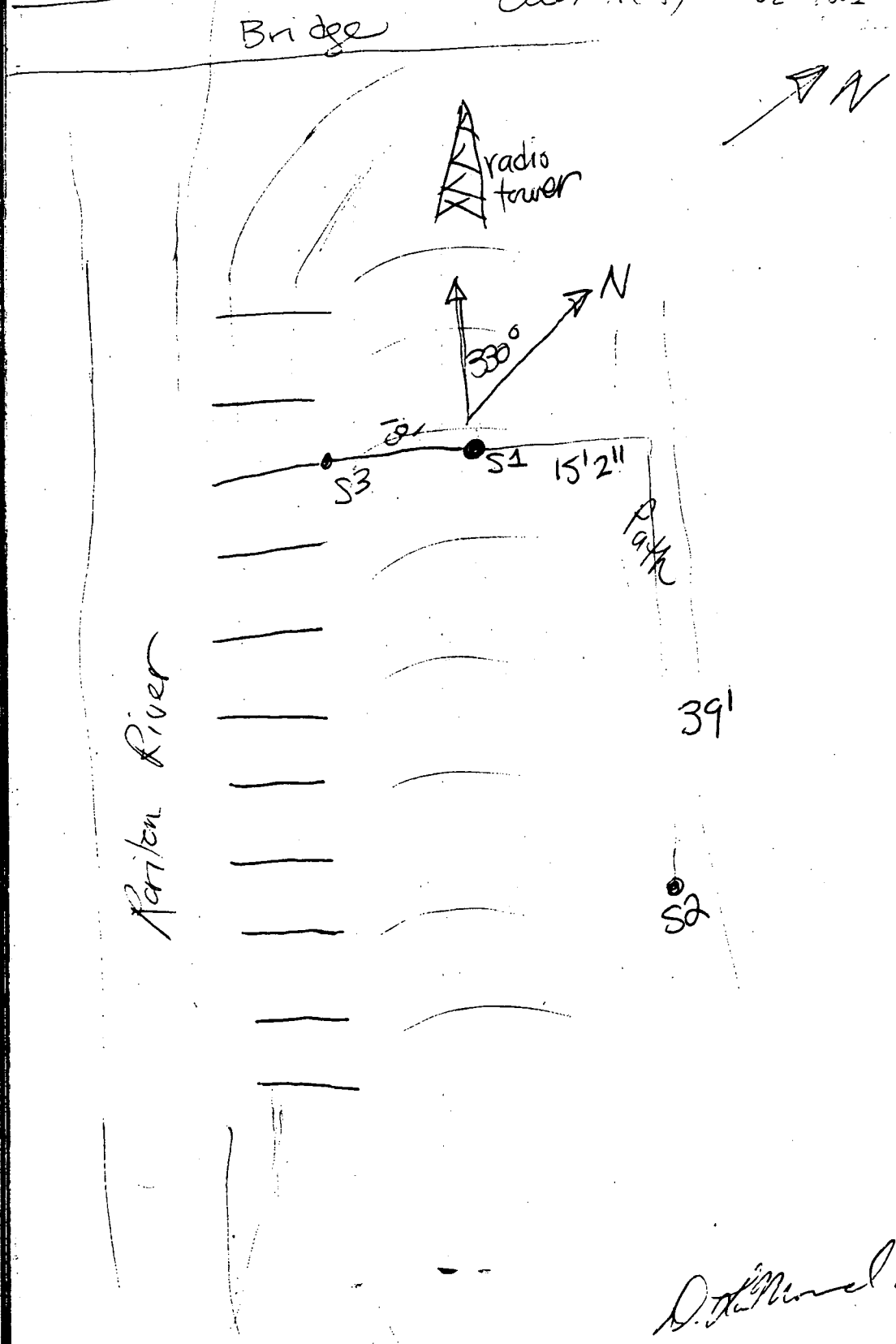
- no readings above background on the OVA, HNU and minirad
- Gallagher + Naldrum started collecting S1 in level C
- hit refusal at 14", composite of 10"-14"

1155 - 2-P4/S4 photo of gully from on top of the landfill, facing south; gully down face of landfill

5-7-90 1200 - no readings in bowl on OVA and HNU

4/27/90 D. LeMond 5-7-90 Mari- Cler 4/27/90

4-27-90 Celotex (A) 02-9002-10



D. [illegible] 5-7-90

4-27-90 [illegible]

I-10

Celotex (A) 02-9001-10 4/27/90 33

1204 - 2P5/S5 photo of ~~Mr~~ M. Gallagher collecting S1 sample
1215 - moving over to location for S2, started sampling S2

location of S1: 330° W, in line with radio tower, southern slope of landfill on top, approximately 350' east of benchmark (tower)

1225 - 2P6/S6 phot of Meldrim sampling S2
- see opposite page for location of S2
- S2 is a surface soil sample
1235 - moving toward sampling location S3
- started sampling
- soil at S3 higher moisture content
S3 is a surface soil sample

1240 - photo of Meldrim taking S3 → ~~2-P6/S6~~ 2-P7/S7
MC 5-6-90

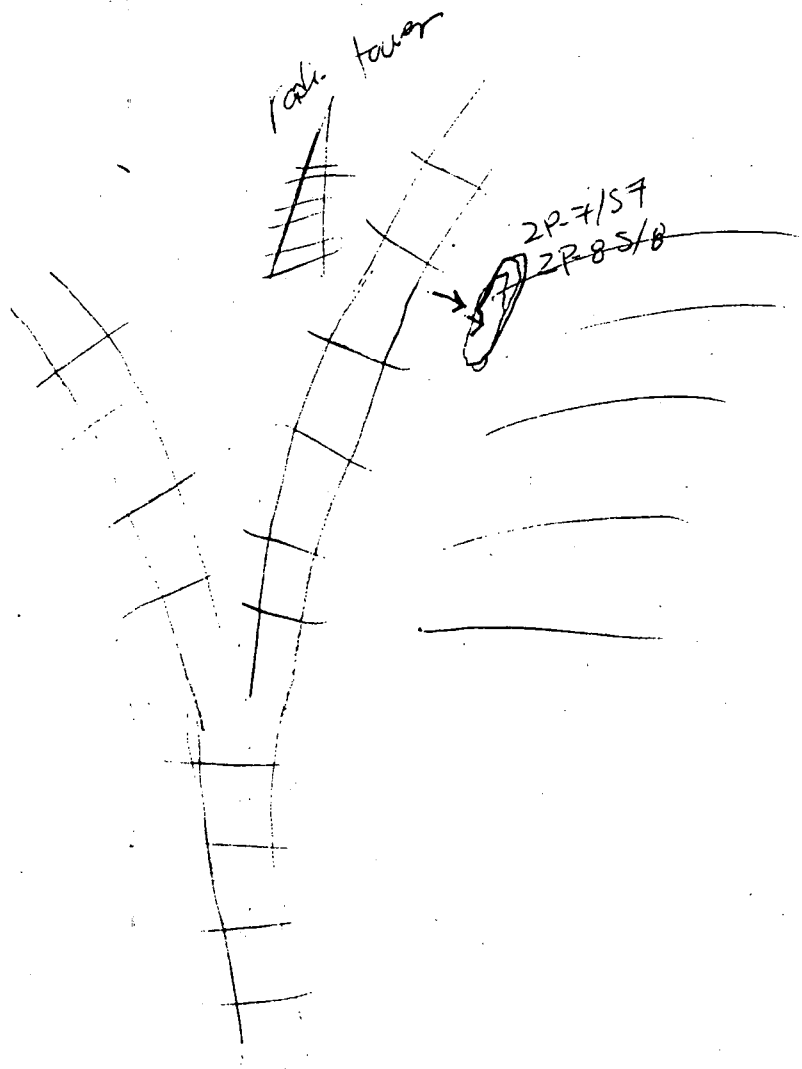
1245 - no readings above background on OVA, HNU and minirad
- left location of S3, heading back to command post
- removed catridge masks
Meldrim
Gallagher

5-7-90

Mari-Oler

D. McMinn 5-7-90 Mari-Oler 4/27/90

4/27/90 Celotex (A) 02-9001-10



250 - Lamend spots leachate pit at edge of south face of landfill,

D. McMond 5-7-90

Mari-Coler 4/27/90

Celotex (A) 02-9001-10 4/27/90

1255 ~~2-P7/S87~~ MC 5-6-90 MC 4-27-90 } photos of leachate or RR car spillage
2-P8/S8 } stream MC 4-27-90 at bottom
2-P9/S9 of SW slope of landfill, near radio tower

1305 - starting decon procedures
- sample coolers checked and custody sealed

1315 - finished deconing
- cleaning up

1335 - finished loading up
- leaving site

1340 - signed out
left site
- Harrison took samples to Fed Express and archived samples for asbestos analysis at EPA in Edison

Note: samples were archived at EPA at 1500 hours

4/27/90

D. McMonds 5-7-90 Marc - [illegible] 4/27/90

Letter (A) 02-9001-10 4/27/90 + 4/26/90

Photograph Log
- all photographs taken by Maria Coler

Photo Number	Description	Date	Time
1-P1/S1	photo of ~~M. Meldrim~~ D. Benfer MC 5-6-90 and M. Gallagher collecting GW1 sample from MW4,	4/26/90	1245
1-P2/S2	photo of ~~M. Meldrim~~ D. Benfer and M. Gallagher collecting GW5 sample from MW4	"	1247
1-P3/S3	photo of railroad bridge near location of SW4/SED4 sample, facing south	"	1320
1-P4/S4	photo of oily sheen on water in creek near location of SW4 sample, facing south	"	1320
1-P5/S5	photo of workers cleaning up sewage spillage on north bank of Raritan River, facing south	"	1320
1-P6/S6	photo of creek leading into Raritan River, under railroad bridge, facing south	"	1320

5/6/90

Mar-Coler 4/27/90

Celotex (A) 02-9001-10 4/26-27/90

Photo Log (cont'd)

Photo Number	Description	Date	Time
1-P7/S7	photo of ~~N. Aldrin~~ D. Benfer and M. Gallagher, on air, collecting GW2 sample at MW4	4/26/90	1405
1-P8/S8	photo of rusted drum near location of NW2	"	1440
1-P9/S9	photo of D. Benfer and M. Gallagher collecting CW3 sample from MW2	"	1512
1-P10,11,12/S10,11,12	~~phot~~ MGS 10-12 panoramic view, sweeping southwest from parking lot of adjacent apartment building to "leachate pit" near stormwater drainage pipe	"	1740
1-P13/S13	photo of "leachate pit", facing south	"	1745
1-P14/S14	photo of rivulet from "leachate pit" entering creek near stormwater discharge pipe	"	1745
1-P15/S15	photo of debris north of "leachate pit", facing north	"	1745

Marin Oler 5/6/90

Cultex (A) 02-9001-10 4/26-27/90

Photo Log (cont'd)

Photo Number	Description	Date	Time
1-P16/S16	closeup photo of "leachate pit"	4/26/90	1745
1-P17/S17	photo of S. Benfer + M. Gallagher collecting GW4 sample from MW1	"	1825
2-P1/S1	photo of M. Gallagher and M. Meldrin collecting SED 5 sample from catchbasin, east of MW5	4/27/90	1040
2-P2/S2	photo of M. Gallagher and M. Meldrin collecting SED6 sample from catch basin, east of MW5	"	1042
2-P3/S3	photo of tank truck cleaning company located adjacent to south face of landfill, facing northeast from ~~loc~~ SED5/SED6 location	"	1112
2-P4/S4	photo of gully running down north face of landfill, from top of landfill, facing south	"	1155
2-P5/S5	photo of M. Gallagher collecting S1 sample	"	1204
2-P6/S6	photo of M. Meldrin collecting S2 sample	"	1225

Celotex (A) 02-9001-10

Photo Number	Description	Date	Time
P-P7/S7	Photo of M. Meldrum collecting S3 sample	4/26-27/90 4-27-90	1240
P-P8,9/S8,9	Photos of suspected leachate or railroad car spillage at bottom of southwest slope of landfill, near radio tower	"	1255

Maria Oler 5-6-90

NUS CORPORATION

II

0569

Coletox 11-26-90 02-9001-10
4-26-90

Table of Contents

	Page
On-Site sampling	4-12
PHOTO LOG	13-14

Glenn A. Calabrese
4-26-90

Celotex (A) 02-9001 - 10 4-26-90

All photographs taken by Glenn Calabrese will have photo numbers preceded by "3" to indicate roll three.

MC 5-6-90

Mary-Ann 5-6-90

4-26-90

Coletax
02-4001-10
4-26-90

0945 I, Mana Coler, am transferring this logbook (# 0569) over to Glenn Calabrese. Mana Coler 4-26-90

esc 4-26-90
1005 Arrived at SW1/SED1 Location

1015 OVA in breathing zone - 3 ppm
OVA near running water out of drainage pipe (001) - 30 ppm, A methane flush was performed and methane is present.

No above background readings on the HNU near the running water nor the breathing zone

1130 Angie filling bottles of surface water.

1140 PHOTO of Angie filling SW1.
3-P1

D. L. Mond
5-7-90

Glenn A. Calabrese
4-26-90

Coletx
02-9001-10
4-26-90

1145 Surface water samples were collected out of discharge pipe 001. Identical readings on the OVA and HNU were obtained as before.

1150 Dan, a site sample technian supplied by the site repr. for the purpose of splitting samples, is accompanying us to all the surface water and sediment samples locations.

1205 Joanne is the sampler for the sediment sample here.
As the sediment was broken a reading of 9ppm on the OVA was recorded and no above background readings on the HNU. The sediment was orange color.

[signature] 5-7-90 Ellen A. Calabria
4-26-90

Coletx
02-4001-10
4-26-90

1220 photo of Joanne Billing sediment sample - Sed 1
3-P2

This sample was collected 6 feet 8 inches from the cement discharge pipe 001 and a composite of 0-3 inch in depth

1250 Arrived at SW4/Sed4 location

no readings above background on the OVA or HNU over the running water.

~~Angie~~ Joanne is sampling here

1305 Photo of Joanne filling SW-4
3-P3

At this location she is using a clean empty 40mL bottles to transfer the SW to the larger bottles. This was also done at SW-1 by Angie.

5-7-90

Ellen A. Calabrese
4-26-90

Colctx
02-4001-10
4-26-90

1315 There is a light oily sheen to the surface water.

Dan, explained to me that recently a sewage spillage occurred in the vicinity (evidenced by the men cleaning near-by)

1325 Angie ~~is~~ will fill the sediment bottles at this location. She will take a composite sample of 0-3 inches in depth.

As the soil was broken no above background readings on the OVA or HNU were recorded.
The sediment is black in color (nature) oily substance

1335 photo of Angie collected sed-4
3-P4 The sample is 105° from the black smoke stack and 15 feet from the railroad tracks and 13 feet 10 inches from the north corner of the base of the railroad tracks. (closest to the Raritan river)
inner tracks

[signature]
5-7-90

Ellen A. Calabrese
4-26-90

colctx
02-4001-10
4-26-90

1400 Arrived back at command Post
Rested and drank fluids

1420 Packed up the cooler with
samples 2 & 3. (SW & SED samples)

1500 Arrived at SW-2/SED-2 location
in the small drainage area adjacent
to the landfill on the east side.
The area is littered with garbage,
several empty drums, and old ~~rotten~~ EW 4-26-90
rusted drums with material inside Hardened.

1515 No readings above background on the
OVA or HNU before and after the
surface of the drainage ditch was
broken.

1520 Joanne is collecting samples here of
SW-2.

[illegible] 4/7/90

Ellen A. Calabrese
4-26-90

Celotex A 02-9001-10 4-26-90

brick building is approximately 725' from the sample location for SW-3 →

MC. 4-9-90

Maria Oler 4-9-90

4-26-90

02-9001-10
Coletx
4-26-90

1530 Joanne is collecting SW-3 (PHOTO) 3-P5
MS/MSD

surface water is collect~~ing~~ed in the est 4-26-90
middle of the drainage ditch, ~~40°~~ 90°
from the SW corner of the brick building
4 feet from the tree on the EAST side
of the ditch

1545 Angie is collecting sed-3
After breaking the sed 3 area
no above background readings on the
OVA or HNU. The sed-3 will be
collected 0-3 inches in depth

1555 PHOTO of Angie collecting sed-3
3-P6 Soil is black here. — 3-P6

1600 3-P7/P8 PHOTOS of Two drums
~~And~~ one down ditch of sed-3 and
4-26-90
one up ditch of sed-3

D. [illegible]
5-7-90

Glenn A. Calahan
4-26-90

4-9-90

~~02-4001-10~~
Calctx
~~4-26-90~~

1610 3-P9 photo of creek, facing downstream (south)
3-P10 photo of creek, facing upstream (North)
MC 5-6-90

1630 Back at command Post
Rested and drank fluids

1645 loaded for sed-2/sw-2

~~1702~~ esc. 4-26-90
1720 Arrived at sed-2/sw2 location

Joanne collecting sw samples
No readings above background
on the OVA or HNU before and
after the disturbance of the sw.

Glenna Calahan
4-26-90

D. LaMard
5-7-90

Colety
4-26-90
02-4001-10

1730 There is a small (Leachate) pit 7 feet West of the discharge ~~pit~~ pipe.
EAL.
11-26-90

1745 PHOTO of Angie collecting
3-P11 SW-2
It is collected immediately out of the drainage pipe

1750 NO above background readings on the OVA or HNU AS we broke the sediment surface.

0-3 inches in depth will be collected here by Angie, 6 inches from the West side of the cement pipe

1800 PHOTO of Joanne filling bottles
3-P12 (for SED 2 sample) * MC 5-6-90
1805 Departed location

D. [illegible]
5-7-90

Glenn A. Calabrese
4-26-90

02-4001-10
esc ~~Coletx~~ esc. 4-26-90
4-26-90 Coletx
4-26-90

1845 Arrived back at command Post

I Glenn A. Calabrese, am transferring this logbook (#0569) over to Maria Coler.

Glenn A. Calabrese ~~4-26-90~~ esc. 4-30-90
4-30-90

D. LaMond
5-7-90

Glenn A. Calabrese
4-26-90

Celotex (A) 02-9001-10 4-26-90 13

Photograph Log
- all photos taken by Glenn Calabrese

Photo Number	Description	Time
3-P1	photo of A. Perez collecting SW1 sample	1140
3-P2	photo of J. Torchia collecting SED1 sample	1220
3-P3	photo of J. Torchia collecting SW4 sample	1305
3-P4	photo of A. Perez collecting SED4 sample	1335
3-P5	photo of J. Torchia collecting SW3 sample	1530
3-P6	photo of A. Perez collecting SED3 sample	1555
3-P7	photo of drum upstream of SED3 sample	1600
3-P8	photo of drum upstream of SED3 sample	1600
3-P9	photo of creek, facing downstream (South)	1620

Maria Oler 5-6-90

Photo Log (cont'd) Celotex (A) 02-9001-10 4-26-90

Photo Number	Description	Time
3-P10	photo of creek, facing upstream (North)	1610
3-P11	photo of A. Perez collecting SW2 sample	1745
3-P12	photo of J. Torchia collecting SED2 sample	1800

Mari Olsen 5-6-90

REFERENCE NO. 7

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION

PERMIT NO.	ISSUANCE DATE	EFFECTIVE DATE	EXPIRATION DATE
NJ0050750	8/17/84	10/1/84	9/30/87

ISSUED TO	FOR ACTIVITY/FACILITY AT	OWNER
Celotex Corporation Herbert & Markets Streets Perth Amboy City, NJ 08862	Celotex Corporation Herbert and Market Streets Perth Amboy City, N.J. 08862	SAME AS APPLICANT

ISSUING DIVISION	TYPE OF PERMIT	STATUTE(S)	APPLICATION NO
[X] Water Resources [ ] Coastal Resources [ ] Environmental Quality	NJPDES Initial Interim Permit for Discharge to Ground Water	N.J.S.A. 58:10A-1 et seq. N.J.A.C. 7:14A-1 et seq.	N/A

A PERMIT TO monitor the ground water quality at a sanitary landfill in Perth Amboy City by operating and maintaining 5 ground water monitoring wells according to the specific and general conditions of this Initial Interim NJPDES permit. The Initial Interim NJPDES permit is intended to establish an adequate ground water monitoring program at the above named facility. This perm is only intended to obtain ground water data to evaluate the current status and impact of the facility on ground water. It shall not be construed, nor is it intended to be an approval of ar activity that the permittee has conducted which adversely effects the environment, ground or surface water quality, or threatens the public health, safety, or welfare.

BY AUTHORITY OF:
JOHN W. GASTON, JR., P.E.
DIRECTOR, DIVISION OF WATER RESOURCES

DEP AUTHORIZATION K-F IIa

Form DEP-008
7/80

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.

FACT SHEET

for LANDFILLS to Discharge
Into the Ground Waters of the State

NAME AND ADDRESS OF APPLICANT:

Celotex Corporation
Herbert and Market Streets
Perth Amboy City, New Jersey 08862

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Celotex Corporation
Herbert and Market Streets
Perth Amboy City, New Jersey 08862

RECEIVING WATER:

Ground waters of the state. The discharge is to Quaternary glacial deposits overlying the Raritan-Magothy aquifer systems.

DESCRIPTION OF FACILITY:

The Celotex Corporation manufactures roofing material, plastics and tile. The landfill is a closed 26.2 acre site along the Raritan River which accepted bulky waste from its manufacturing process.

DESCRIPTION OF NJPDES GROUND WATER MONITORING PERMIT:

The discharge from the landfill is in the form of leachate. Five (5) ground water monitor wells will be tested on a periodic basis.

PERMIT CONDITIONS:

Issue a minor modification of an existing NJPDES Permit. The minor modification is of the sampling schedule only. The sampling for parameters to be analyzed annually is changed from October to April, effective April 1987. The frequency in sampling and the parameters specified in the original permit remain unaffected.

The Ground Water Monitoring Requirements for Industrial Waste Management Facilities and Hazardous Waste Interim Status Facilities

The Permittee shall install and sample a total of 5 ground water monitoring wells according to the schedule below. All ground water elevations must be determined prior to pumping and sampling the ground water monitoring wells. Sampling of the ground water monitoring wells shall be performed according to the methodology specified in Section 6.12 of the NJPDES regulations and the Department's Field Procedures Manual for Water Data Acquisition. The Permittee shall sample for all parameters for which there is an "X" to the left of the parameter name. Sampling shall be performed during the months which are specified for that parameter.

	PARAMETER	LIMITATION	SAMPLING MONTH	SAMPLE TYPE	REPORTING MONTH
	Aldrin/Dieldrin	0.003 ppb	JanAprJulOct	Grab	FebMayAugNov
X	Ammonia Nitrogen	0.5 ppm	JanAprJulOct	Grab	FebMayAugNov
X	Arsenic	0.05 ppm	Apr	Grab	May
X	Barium	1.0 ppm	Apr	Grab	May
	Benzidine	0.1 ppb	JanAprJulOct	Grab	FebMayAugNov
X	Biochemical Oxygen Demand (BOD)	--- ppm	JanAprJulOct	Grab	FebMayAugNov
X	Cadmium	0.01 ppm	Apr	Grab	May
	Calcium	--- ppm	JanAprJulOct	Grab	FebMayAugNov
X	Chemical Oxygen Demand (COD)	--- ppm	JanAprJulOct	Grab	FebMayAugNov
X	Chloride	250 ppm	JanAprJulOct	Grab	FebMayAugNov
X	Chromium (Hex)	0.05 ppm	Apr	Grab	May
X	Coliform Bacteria	(1)	Apr	Grab	May
X	Color	Unnoticeable	JanAprJulOct	Grab	FebMayAugNov
X	Copper	1.0 ppm	JanAprJulOct	Grab	FebMayAugNov
X	Cyanide	0.2 ppm	Apr	Grab	May
	DDT & Metabolites	.001 ppb	JanAprJulOct	Grab	FebMayAugNov
	Endrin	0.004 ppb	JanAprJulOct	Grab	FebMayAugNov
	Fecal Coliform	(1)	JanAprJulOct	Grab	FebMayAugNov
X	Fluoride	2.0 ppm	Apr	Grab	May
X	Foaming Agents	0.5 ppm	JanAprJulOct	Grab	FebMayAugNov
	Gross Alpha	15 pCi/l	JanAprJulOct	Grab	FebMayAugNov
	Gross Beta	4milrem/yr	JanAprJulOct	Grab	FebMayAugNov
X	Hardness	--- ppm	Apr	Grab	May
X	Iron	0.3 ppm	JanAprJulOct	Grab	FebMayAugNov

GROUND WATER MONITORING REQUIREMENTS AND LIMITATIONS - Page 2

	PARAMETER	LIMITATION		SAMPLING MONTH	SAMPLE TYPE	REPORTING MONTH
	Kjeldahl Nitrogen	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Lead	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
	Lindane	4	ppb	JanAprJulOct	Grab	FebMayAugNov
	Magnesium	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Manganese	0.05	ppm	Apr	Grab	May
X	Mercury	0.002	ppm	Apr	Grab	May
	Methoxychlor	100	ppb	JanAprJulOct	Grab	FebMayAugNov
X	Nitrate Nitrogen (NO_3-N)	10	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Odor and Taste	None Noticeable		JanAprJulOct	Grab	FebMayAugNov
	Oil and Grease	10	ppm	JanAprJulOct	Grab	FebMayAugNov
X	pH	5-9	SU	JanAprJulOct	Grab	FebMayAugNov
X	Phenols	0.3	ppm	JanAprJulOct	Grab	FebMayAugNov
	Phosphate, Total	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Polychlorinated Biphenyls (PCBs)	0.001	ppb	JanAprJulOct	Grab	FebMayAugNov
	Radionuclides	(2)		JanAprJulOct	Grab	FebMayAugNov
	Radium	5	pCi/l	JanAprJulOct	Grab	FebMayAugNov
X	Selenium	0.01	ppm	Apr	Grab	May
X	Silver	0.05	ppm	Apr	Grab	May
X	Sodium	50	ppm	JanAprJulOct	Grab	FebMayAugNov
	Specific Conductance	(umho/cm)		JanAprJulOct	Grab	FebMayAugNov
X	Sulfate	250	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Total Dissolved Solids (TDS)	500	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Total Organic Carbon (TOC)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Total Organic Halogen (TOH or TOX)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Total Volatile Organics by GC/MS Scan (3)	50	ppb	Apr	Grab	May
	Toxaphene	5	ppb	JanAprJulOct	Grab	FebMayAugNov
X	Turbidity	---	ppm	Apr	Grab	May
X	Zinc	5	ppm	JanAprJulOct	Grab	FebMayAugNov
	2,4-D	100	ppb	JanAprJulOct	Grab	FebMayAugNov
	2,4,5-TP, Silvex	10	ppb	JanAprJulOct	Grab	FebMayAugNov
X	Asbestos	30000 Fibers/L		JanAprJulOct	Grab	FebMayAugNov

E-5-4

REFERENCE NO. 8

Jim Walter corporation
POST OFFICE BOX 31075 · 1500 NORTH DALE MABRY
TAMPA, FLORIDA 33631-3075

March 22, 1990

Ms. Maria Coler
NUS Corporation
1090 King Georges Post Road - Suite 1103
Edison, NJ 08837

Re: The Celotex Corporation
Perth Amboy, New Jersey

Dear Ms. Coler:

Enclosed is the monitoring well results you requested on March 13. If additional information is desired, please give me a call.

In that you indicated the photographs you took would be developed in approximately two days, I assume they are in the mail, as you promised.

I would like to know what parameters you intend to analyze the samples that are scheduled to be taken on April 11.

Sincerely,

L. M. Colburn
Director,
Environmental Affairs

Enc.

cc: C. G. Obermeyer
Mark Rudman

WELL No. 1

PARAMETER	UNITS	VALUE	4/20/89	6/19/89	10/25/89	1/10-11/90
ELEV. TOP CASING TO H_2O	MSL		39.54	39.54	39.54	39.54
ELEV. TOP ORIG. GRD TO H_2O	MSL		36.54	36.54	36.54	36.54
DEPTH FROM T.C. TO H_2O	FT.		20.4	19.6	19.55	19.2
DEPTH FROM O.G. TO H_2O	FT.		17.4	16.6	16.55	16.2
ARSENIC, DISSOLVED	UG/L		10 K			
BARIUM "	UG/L		500 K			
B.O.D. 5 DAY	MG/L		4 K	<4	<4	4.7
CADIUM, DISSOLVED	UG/L		5 K			
CHLORIDE, "	UG/L		89000	95000	76000	95000
CHROMIUM, "	UG/L		—			
CHROMIUM, " , HEX	UG/L		50 K			
C.O.D.	MG/L		52	88	130	130
COLIFORM	N/100 ML		0			
COLOR	PT-CO		10	<5	10	30
COPPER, DISSOLVED	UG/L		50 K	<50	<20	<20
CYANIDE	MG/L		0.035			
FLUORIDE, DISSOLVED	MG/L		0.25			
HARDNESS $CaCO_3$	MG/L		350			
IRON, DISSOLVED	UG/L		100 K	1200	300	200
LEAD, DISSOLVED	UG/L		5 K	<5	<5	<5
MANGANESE, "	UG/L		6400			
MERCURY, "	UG/L		0.2 K			
METHYLENE BLUE ACTING SUB.	MG/L		0.2 K	<0.02	0.05	0.04
NITROGEN, AMM., DISSOLVED	MG/L		1 K		<1	<1
NITROGEN, NITRATE, "	MG/L		1 K	<1	<1	<1
ODOR	T.O.N.		NOTICEABLE	NOT NOTICEABLE	NOT NOTICEABLE	NOTICABLE
pH	S.U.		6.1	6.0	6.4	6.5
PHENOLS, TOOL RECOV.	UG/L		200 K	<200	<200	<200
SELENIUM, DISSOLVED	UG/L		5 K			
SILVER, "	UG/L		10 K			
SODIUM, "	MG/L		35	41	34	40
SULFATE, " (SO_4)	MG/L		35	73	57	110
T.D.S.	PPM		400	500	540	430
T.O.C.	PPM		2	2.5	2.8	2.8
TURBIDITY	NTU		12			
ZINC, DISSOLVED	UG/L		14	48	<20	<20
ASBESTOS	MFL		90 K	<80	130	130

WELL NO. 2

PARAMETER	UNITS	VALUE	4/20/89	6/19/89	10/25/89	1/10-11/90
ELEV. TOP CASING TO H_2O	MSL		11.07	11.07	11.07	11.07
ELEV. TOP OBS. GRD TO H_2O	MSL		8.07	8.07	8.07	8.07
DEPTH FROM T.C. TO H_2O	FT		3.35	3.00	3.10	3.00
DEPTH FROM O.G. TO H_2O	FT.		0.35	0.00	0.10	0.00
ARSENIC, DISSOLVED	UG/L		<10			
BARIUM "	UG/L		<500			
B.O.D. 5 DAY	MG/L		<4	8.6	8.2	<4
CADIUM, DISSOLVED	UG/L		<5			
CHLORIDE, "	UG/L		45000	520000	640,000	370,000
CHROMIUM, "	UG/L					
CHROMIUM, " HEX	UG/L		<50			
C.O.D.	MG/L		120	74	73	780
COLIFORM	N/100 ML		0			
COLOR	PT-CO		20	5	10	30
COPPER, DISSOLVED	UG/L		<50	<50	42	<20
CYANIDE	MG/L		<0.02			
FLUORIDE, DISSOLVED	MG/L		0.25			
HARDNESS $CaCO_3$	MG/L		340			
IRON, DISSOLVED	UG/L		4300	5500	<100	1600
LEAD, DISSOLVED	UG/L		<5	<5	<5	<5
MANGANESE, "	UG/L		2100			
MERCURY, "	UG/L		<0.2			
METHYLENE BLUE ACTING SUB.	MG/L		<0.2	<0.02	0.06	0.04
NITROGEN, AMM., DISSOLVED	MG/L		3.5	2.8	4.8	2.8
NITROGEN, NITRATE, "	MG/L		<1	<1	<1	<1
ODOR	T.O.N.		NOTICEABLE	NOTICEABLE	NOTICEABLE	NOTICEABLE
pH	S.U.		6.3	6.5	6.8	6.7
PHENOLS TOTAL RECOV.	UG/L		<200	<200	<200	<200
SELENIUM, DISSOLVED	UG/L		<5			
SILVER, "	UG/L		<10			
SODIUM, "	MG/L		350	330	260	270
SULFATE, " (SO_4)	MG/L		23	21	1.9	51
T.D.S.	PPM		1200	1200	1600	890
T.O.C.	PPM		2.7	4.6	3.9	3.9
TURBIDITY	NTU		9.5			
ZINC, DISSOLVED	UG/L		<10	25	36	<20
ASBESTOS	MEL		<100	2600	72	76

WELL NO. 3

PARAMETER	UNITS	VALUE	4/20/89	6/19/89	10/25/89	1/10-11/90
ELEV. TOP CASING TO H_2O	MSL		8.52	8.52	8.52	8.52
ELEV. TOP ORIG. GRD TO H_2O	MSL		5.52	5.52	5.52	5.52
DPTH FROM T.C. TO H_2O	FT		3.55	3.55	3.50	3.45
DPTH FROM O.G. TO H_2O	FT.		0.55	0.55	0.50	0.45
ARSENIC, DISSOLVED	UG/L		22			
BARIUM "	UG/L		<500			
B.O.D. 5 DAY	MG/L		7.2	14	20	9.7
CADIUM, DISSOLVED	UG/L		<5			
CHLORIDE, "	UG/L		1,100,000	1,200,000	1,500,000	1,400,000
CHROMIUM, "	UG/L					
CHROMIUM, " , HEX	UG/L		<50			
C.O.D.	MG/L		110	240	140	210
COLIFORM	N/100 ML		0			
COLOR	PT-CO		15	10	10	40
COPPER, DISSOLVED	UG/L		<50	<50	<20	<20
CYANIDE	MG/L		<0.02			
FLUORIDE, DISSOLVED	MG/L		1.2			
HARDNESS $CaCO_3$	MG/L		1400			
IRON, DISSOLVED	UG/L		11000	14000	7500	11000
LEAD, DISSOLVED	UG/L		<5	<5	<5	7.3
MANGANESE, "	UG/L		1200			
MERCURY, "	UG/L		<0.2			
METHYLENE BLUE ACTING SUB.	MG/L		0.06	<.02	0.05	0.065
NITROGEN, AMM., DISSOLVED	MG/L		8	12	9	5.9
NITROGEN, NITRATE, "	MG/L		<1	<1	<1	<1
ODOR	T.O.N.		NOTICEABLE	NOTICEABLE	NOT NOTICEABLE	NOTICEABLE
pH	S.U.		6.6	6.9	6.4	6.6
PHENOLS TOTAL RECOV.	UG/L		<200	<200	<200	<200
SELENIUM, DISSOLVED	UG/L		<5			
SILVER, "	UG/L		<10			
SODIUM, "	MG/L		520	490	120	690
SULFATE, " (SO_4)	MG/L		5.6	3.6	57	5
T.D.S.	PPM		3000	2400	540	3100
T.O.C.	PPM		11	15	2.8	13
TURBIDITY	NTU		10			
ZINC, DISSOLVED	UG/L		14	35	<20	26
ASBESTOS.	MFL		2200	<90	130	1200

WELL No. 4

PARAMETER	UNITS	VALUE	4/20/89	6/19/89	10/25/89	1/10-11/90
ELEV. TOP CASING TO H_2O	MSL		13.39	13.39	13.39	13.39
ELEV. TOP ABSG. GRD TO H_2O	MSL		10.39	10.39	10.39	10.39
DPTH FROM T.C. TO H_2O	FT		7.70	7.80	7.80	7.40
DPTH FROM O.G. TO H_2O	FT.		4.70	4.30	4.8	4.40
ARSENIC, DISSOLVED	UG/L		<10			
BARIUM "	UG/L		<500			
B.O.D. 5 DAY	MG/L		<4	<4	4.8	<4
CADMIUM, DISSOLVED	UG/L		<5			
CHLORIDE, "	UG/L		26000	23,000	290,000	40,000
CHROMIUM, "	UG/L					
CHROMIUM, " , HEX	UG/L		<50			
C.O.D.	MG/L		60	53	58	140
COLIFORM	N/100 ML		0			
COLOR	PT-CO		10	30	10	60
COPPER, DISSOLVED	UG/L		<50	<50	<20	<20
CYANIDE	MG/L		<0.02			
FLUORIDE, DISSOLVED	MG/L		0.27			
HARDNESS $CaCO_3$	MG/L		460			
IRON, DISSOLVED	UG/L		38000	26000	7500	19000
LEAD, DISSOLVED	UG/L		<5	<5	7.9	<5
MANGANESE, "	UG/L		2000			
MERCURY, "	UG/L		<0.2			
METHYLENE BLUE ACTING SUB.	MG/L		0.08	<0.02	0.08	0.09
NITROGEN, AMM., DISSOLVED	MG/L		<1	<1	<1	<1
NITROGEN, NITRATE, "	MG/L		<1	<1	<1	<1
ODOR	T.O.N.		NOT NOTICEABLE	NOT NOTICEABLE	NOT NOTICEABLE	NOT NOTICEABLE
pH	S.U.		6.3	6.5	7.1	6.3
PHENOLS TOTAL RECOV.	UG/L		<200	<200	<200	<200
SELENIUM, DISSOLVED	UG/L		<5			
SILVER, "	UG/L		<10			
SODIUM, "	MG/L		39	40	39	36
SULFATE, " (SO_4)	MG/L		45	110	120	120
T.D.S.	PPM		680	690	1100	690
T.O.C.	PPM		11	15	12	13
TURBIDITY	NTU		14			
ZINC, DISSOLVED	UG/L		21	35	63	<20
ASBESTOS.	MFL		91	<80	150	77

WELL No. 5

PARAMETER	UNITS	VALUE	4/20/89	6/19/89	10/25/89	1/10-11/90
ELEV. TOP CASING TO H_2O	MSL		30.01	30.01	30.01	30.01
ELEV. TOP ORIG. GRD TO H_2O	MSL		27.57	27.57	27.57	27.57
DEPTH FROM T.C. TO H_2O	FT		10.55	10.20	10.00	11.15
DEPTH FROM O.G. TO H_2O	FT.		8.11	7.76	7.56	8.71
ARSENIC, DISSOLVED	UG/L		<10			
BARIUM "	UG/L		<500			
B.O.D. 5 DAY	MG/L		4.9	6.9	6.3	4.6
CADIUM, DISSOLVED	UG/L		<5			
CHLORIDE, "	UG/L		55,000	15,000	19,000	25000
CHROMIUM, "	UG/L					
CHROMIUM, " , HEX	UG/L		<50			
C.O.D.	MG/L		260	<50	52	52
COLIFORM	N/100ML		0			
COLOR	PT-CO		15	5	20	60
COPPER, DISSOLVED	UG/L		<50	<50	<20	<20
CYANIDE	MG/L		<0.02			
FLUORIDE, DISSOLVED	MG/L		0.47			
HARDNESS $CaCO_3$	MG/L		240			
IRON, DISSOLVED	UG/L		15,000	9700	5200	8100
LEAD, DISSOLVED	UG/L		<5	<5	<5	<5
MANGANESE, "	UG/L		55000			
MERCURY, "	UG/L		<0.2			
METHYLENE BLUE ACTING SUB	MG/L		0.04	<0.02	0.08	0.07
NITROGEN, AMM., DISSOLVED	MG/L		<1	<1	<1	<1
NITROGEN, NITRATE, "	MG/L		<1	<1	<1	<1
ODOR	T.O.N.		NOTICEABLE	NOT NOTICEABLE	NOTICEABLE	NOT NOTICEABLE
pH	S.U.		6.2	6.2	6.8	6.5
PHENOLS, TOTAL RECOV.	UG/L		<200	<200	<200	<200
SELENIUM, DISSOLVED	UG/L		<5			
SILVER, "	UG/L		<10			
SODIUM, "	MG/L		16	19	22	18
SULFATE, " (SO_4)	MG/L		25	32	34	12
T.D.S.	PPM		390	260	400	290
T.O.C.	PPM		7.6	7.5	11	9.5
TURBIDITY	NTU		11			
ZINC, DISSOLVED	UG/L		<10	28	66	<20
ASBESTOS	MFL		94	80	<90	220

[redacted] D[redacted]4/2[redacted]39 [redacted]

PARAMETER	UNITS	VALUE	MONITORING WELL NO. 1	2	3	4	5
ACRYLONITRILE	UG/L		10 J	10 J	10 J	10 J	10 J
BENZENE	UG/L		5 K	5 K	5 K	5 K	5 K
BROMOFORM	UG/L		5 K	5 K	5 K	5 K	5 K
CARBON TETRACHLORIDE	UG/L		5 K	5 K	5 K	5 K	5 K
CHLOROBENZENE	UG/L		5 K	5 K	5 K	5 K	5 K
CHLORODIBROMOETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
CHLOROFORM	UG/L		5 K	5 K	5 K	5 K	5 K
1,1- DICHLOROETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
1,2- "	UG/L		5 K	5 K	5 K	5 K	5 K
1,1- DICHLOROETHYLENE	UG/L		5 K	5 K	5 K	5 K	5 K
1,2- "	UG/L		5 K	5 K	5 K	5 K	5 K
ETHYLBENZENE	UG/L		5 K	5 K	5 K	5 K	5 K
METHYLENE CHLORIDE	UG/L		5 K	5 K	5 K	5 K	5 K
1,1,2,2- TETRACHLOROETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
TETRACHLOROETHYLENE	UG/L		5 K	5 K	5 K	5 K	5 K
TOLUENE	UG/L		5 K	5 K	5 K	5 K	5 K
1,1,1- TRICHLOROETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
1,1,2- "	UG/L		5 K	5 K	5 K	5 K	5 K
TRICHLOROETHYLENE	UG/L		5 K	5 K	5 K	5 K	5 K
VINYL CHLORIDE	UG/L		5 K	5 K	5 K	5 K	5 K
ACROLEIN	UG/L		10 J	10 J	10 J	10 J	10 J
CHLOROETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
2- CHLOROETHYLVINYL ETHER	UG/L		5 K	5 K	5 K	5 K	5 K
DICHLOROBROMOMETHANE	UG/L		5 K	5 K	5 K	5 K	5 K
1,3- DICHLOROPROPYLENE	UG/L		5 K	5 K	5 K	5 K	5 K
METHYL BROMIDE	UG/L		5 K	5 K	5 K	5 K	5 K
METHYL CHLORIDE	UG/L		5 K	5 K	5 K	5 K	5 K
1,2- TRANS- DICHLOROETHYLENE	UG/L		5 K	5 K	5 K	5 K	5 K
1,2 DICHLOROBENZENE	UG/L		5 K	5 K	5 K	5 K	5 K
1,3 "	UG/L		5 K	5 K	5 K	5 K	5 K
1,4 "	UG/L		5 K	5 K	5 K	5 K	5 K

J = < THAN ESTIMATED

K = < THAN DETECTION LEVEL

THE CELOTEX CORPORATION
PERTH AMBOY, N.J.
NPDES No. 0050750

"CROSS REF. NYDDES PERMIT 0050750"

DRILLING PERMITS	No. 26-7768	26-7769	26-7770	26-7771	26-7772
WELL NUMBERS.	1	2	3	4	5
[illegible]E No	20449.	A.C. SHULTES & SONS INC.		JULY 11, 1985.	
COMPLETED	8/14/85	8/16/85	8/20/85	8/19/85	8/15/85
TOTAL DEPTH	27'	17'	16'	16'	16'
CAPACITY	10GPM	3GPM	4GPM	2GPM	2GPM.
STATIC LEVEL	15'	G.L.	G.L.	6'	14'
PUMP LEVEL	21'	15'	12'	15'	16'
LOCKS.	YES	YES	YES	YES	YES.
ELEVATION.					
LONGITUDE	WEST 74°17'05.40"	WEST 74°17'05.4"	WEST 74°17'07.1"	WEST 74°17'14.3"	WEST 74°17'14.2"
LATITUDE	NORTH 40°38'37.30"	NORTH 40°30'28.2"	NORTH 40°30'25.3"	40°30'29.5"	40°30'35.3"
ELEVATION TOP OF CASING.	39.54'	11.07'	8.52'	13.39'	30.51'
LAB. CERT #	ROSSNAGEL & ASSOC. / NORTHEASTERN ANALYTICAL CORP # 03117.				
SAMPLED	10/30/85	10/30/85	10/30/85	10/30/85	—
"	1/23/86	1/23/86	1/23/86	1/23/86	1/23/86
"	6/5/86.	6/5/86.	6/5/86.	6/5/86	6/5/86.
REPORTS.	1/17/86	1/17/86	1/17/86	1/17/86	—
"	2/26/86	2/26/86	2/26/86	2/26/86	2/26/86
"	6/30/86	6/30/86	6/30/86	6/30/86	6/30/86

02-9001-10-SI
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
VOLUME 2 OF 3

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9001-10
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 14, 1990

NUS CORPORATION
SUPERFUND DIVISION

REFERENCE NO. 9

SAMPLING TRIP REPORT

SITE NAME:	Celotex (A)
TDD NO.:	02-9001-10
SAMPLING DATE:	April 26 - 27, 1990
EPA CASE NO.:	13938

1. Site Location: Refer to Figure 1

2. Sample Locations: Refer to Figure 2

3. Sample Descriptions: Refer to Tables 1 and 2

4. Laboratories Receiving Samples:

Sample Type	Name and Address of Laboratory
Organic	Env. Control Technology Corp. 3985 Research Park Drive Ann Arbor, MI 48108
Inorganic	Skinner and Sherman, Inc. 300 Second Avenue Waltham, MA 02254

5. Sample Dispatch Data:

A total of fifteen aqueous and four sediment samples for organic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 6625946132 to Env. Control Technology Corp. on April 26, 1990 at 1900 hours.

A total of fourteen aqueous and four sediment samples for inorganic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 6625946121 to Skinner and Sherman, Inc. on April 26, 1990 at 1900 hours.

A total of five soil/sediment samples and three aqueous samples for organic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 6625946180 to Env. Control Technology Corp. on April 27, 1990 at 1340 hours.

A total of five soil/sediment samples and three aqueous samples for inorganic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 6625946272 to Skinner and Sherman, Inc. on April 27, 1990 at 1340 hours.

A total of three soil samples and five aqueous samples for asbestos analysis were transported by FIT 2 personnel to the Archive Room at the U.S. EPA in Edison, NJ on April 27, 1990 at 1500 hours for storage.

6. Sampling Personnel:

April 26, 1990

Name	Organization	Duties on Site
Maria Coler	NUS Corporation, FIT 2	Site Manager, Written and Photographic Documentation
Laura LaForge	NUS Corporation, FIT 2	Site Safety Officer
John Harrison	NUS Corporation, FIT 2	Sample Management Officer
Glenn Calabrese	NUS Corporation, FIT 2	Assistant Site Manager
Joanne Torchia	NUS Corporation, FIT 2	Sampler
Angie Bonilla-Perez	NUS Corporation, FIT 2	Sampler
David Benfer	NUS Corporation, FIT 2	Sampler
Mike Gallagher	NUS Corporation, FIT 2	Sampler
Matt Meldrim	NUS Corporation, FIT 2	Support

April 27, 1990

Name	Organization	Duties on Site
Maria Coler	NUS Corporation, FIT 2	Site Manager, Written and Photographic Documentation
Debbie LaMond	NUS Corporation, FIT 2	Site Safety Officer
John Harrison	NUS Corporation, FIT 2	Sample Management Officer
Mike Gallagher	NUS Corporation, FIT 2	Sampler
Matt Meldrim	NUS Corporation, FIT 2	Sampler

7. Weather Conditions:

The weather for Thursday, April 26, was sunny, approximately 70° F., with a light breeze from the northeast. The weather for Friday, April 27, was sunny, approximately 70°, humid, with a light breeze from the south.

8. Additional Comments:

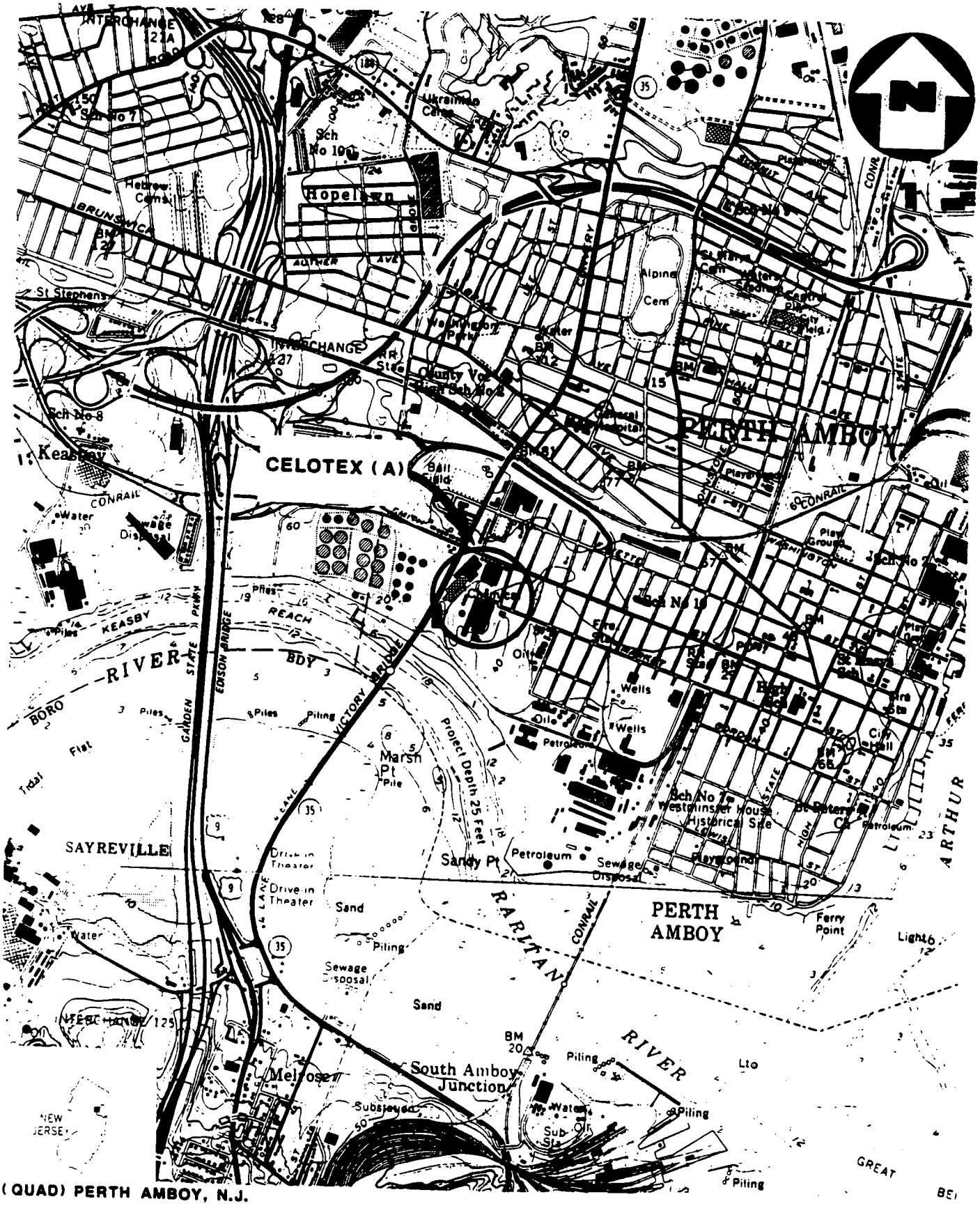
Samples archived at the EPA in Edison, New Jersey will be analyzed for asbestos. All other samples except for the trip blank will be analyzed for Target Compound List (TCL) organic and inorganic compounds, excluding cyanide. The trip blank will be analyzed for volatile organic compounds only.

The sampling plan was modified based on observations made in the field. Due to the homogeneity of the material landfilled and the lack of special conditions on site (e.g. leaking drums), only three of the six soil samples were taken. Sample S1 was collected at a depth of 10"-14" using an auger to characterize the landfilled material. Samples S2 and S3 were collected at a depth of 0"-6" using a trowel. Sample S3 was collected in a gully on the southern face of the landfill to document potential contamination from surface water runoff. Sample S2 was collected on the footpath on top of the landfill where children are known to ride mopeds; this sample was taken to document the potentil for direct contact. An additional SW/SED sample was collected in the creek, near the point where it empties into the Raritan River. This sample was taken to further characterize potential downstream contamination attributable to the landfill.

The NUS sample ID numbers appearing in Tables 1 and 2 were inadvertently assigned the sample number prefix NJDJ in the traffic reports. The correct prefix for this site is NJDG. The proper NUS sample ID numbers appear on the sample placards in the photographs.

9. Report Prepared By: Maria Coler Date: 05/11/90

10. Approved By: Charles W. Bue Date: 5/11/90



(QUAD) PERTH AMBOY, N.J.

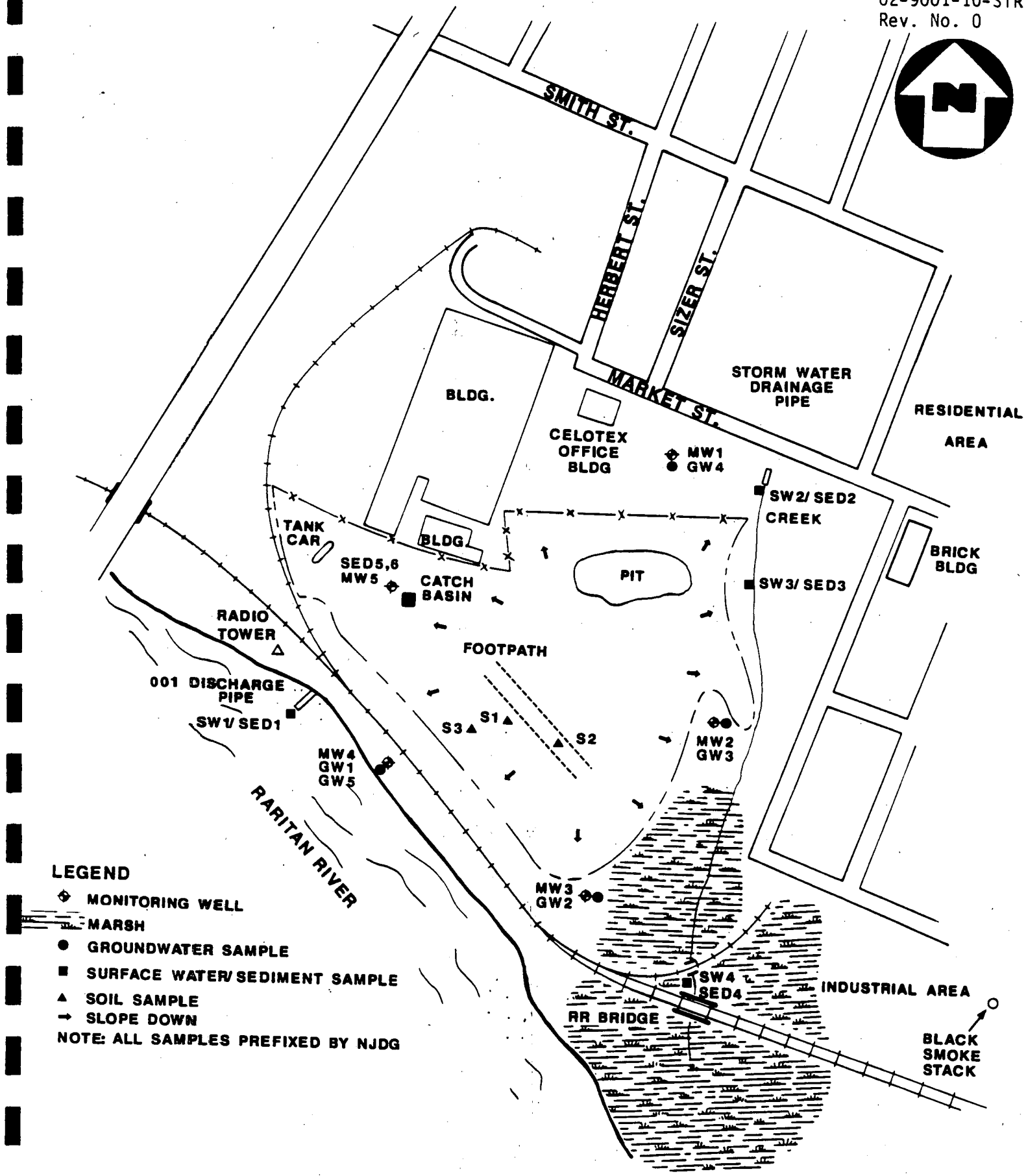
FIGURE 1

SITE LOCATION MAP

CELOTEX (A), PERTH AMBOY, N.J.

SCALE: 1" = 2000'

NUS CORPORATION



SAMPLE LOCATION MAP

CELOTEX (A), PERTH AMBOY, N.J.

NOT TO SCALE

FIGURE 2

NUS CORPORATION

TABLE I
SAMPLE DESCRIPTIONS
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
CASE NO. 13938
APRIL 26, 1990

NUS Sample Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Time	Sample Type	Sample Location
NJDJ-GW1	BDT27	MBCQ75	1245	Groundwater	Sample collected from monitoring well 4, located on north bank of Raritan River.
NJDJ-GW2	BDT28	MBCQ76	1405	Groundwater	Sample collected from monitoring well 3, located at base of southeast face of landfill.
NJDJ-GW3	BDT29	MBCQ77	1512	Groundwater	Sample collected from MW2, located on the east face of the landfill.
NJDJ-GW4	BDT30	MBCQ78	1820	Groundwater	Sample collected from MW1, located east of the Celotex office building, south of Market St.
NJDJ-GW5**	BDT31	MBCQ79	1247	Groundwater	Sample collected from same location as GW1.
NJDJ-SW1	BDT32	MBCQ80	1140	Surface Water	Sample collected from the 001 discharge pipe, located on the north bank of the Raritan River northwest of MW4.
NJDJ-SW2 NJDG	BDT33	MBCQ81	1745	Surface Water	Sample collected from stormwater drainage pipe located north of the northeast corner of landfill and discharging to creek on east side of landfill.

** Duplicate - Indicates that a sample was designated for duplicate analysis.

TABLE I (CONT'D)
SAMPLE DESCRIPTIONS
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
CASE NO. 13938
April 26, 1990

NUS Sample Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Time	Sample Type	Sample Location
NJDJ-SW3*	BDT34 /	MBCQ82 —	1536	Surface Water	Sample collected in the middle of the creek flowing along eastern boundary of landfill, at a bearing of 270° and a distance of approximately 725 feet from brick building located east of landfill.
NJDJ-SW4	BDT35 /	MBCQ83 —	1305	Surface Water	Sample collected at a bearing of 285° from the black smokestack, 15 feet south of the railroad tracks closest to landfill and 13 feet 10 inches from the north corner of the base of the railroad tracks closest to the Raritan River.
NJDJ-SED1 1-14-4	BDT36	MBCQ84 44	1220	Sediment	Sample collected 6 feet 8 inches from the 001 discharge pipe along direction of discharge (southwest).
NJDJ-SED2 1-14-1	BDT37	MBCQ85 44	1800	Sediment	Sample collected 6 inches south from west side of stormwater drainage pipe located north of the northeast corner of landfilll and discharging to creek which runs along east side of landfill.
NJDJ-SED3* 1-14-1	BDT 38	MBCQ86 38	1555	Sediment	Sample collected in middle of the creek, at a bearing of 270° and a distance of approximately 725 feet from the brick building located east of landfill.

* MS/MSD - Indicates that additional sample volume was collected and shipped to the laboratory for matrix spike (MS) and matrix spike duplicate (MSD) analysis.

TABLE I (CONT'D)
SAMPLE DESCRIPTIONS
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
CASE NO. 13938
April 26, 1990

NUS Sample Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Time	Sample Type	Sample Location
NJDJ-SED4	BDT39	MBCQ87	1335	Sediment	Sample collected 285° from the black smokestack, 15 feet south of railroad tracks closest to the landfill and 13 feet 10 inches from the north corner of the base of the railroad tracks closest to the Raritan River.
NJDJ-RIN1	BDT47	MBCQ95	1030	Rinsate	Trowel rinsate blank collected in the field.
NJDJ-RIN2	BDT48	MBCQ96	1015	Rinsate	Bowl rinsate blank collected in the field.
NJDJ-RIN3	BDT49	MBCQ97	1045	Rinsate	Auger rinsate blank collected in the field.
NJDJ-RIN4	BDT50	MBCQ98	1100	Rinsate	Bailer rinsate blank collected in the field
NJDJ-RIN5	BDT51	MBCQ99	1145	Rinsate	Scoop rinsate blank collected in the field.
NJDJ-TBLK1	BDT52	-	0900	Trip Blank	Trip blank; demonstrated analyte-free water obtained from NUS Region 2 FIT, Edison, NJ.

TABLE 2
SAMPLE DESCRIPTIONS
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
CASE NO. 13938
APRIL 27, 1990

NUS Sample Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Time	Sample Type	Sample Location
NJDJ-SED5 1-10y-4	BDT53	MBCQ40 45	1040	Sediment	Sample collected east of MW5, in catch basin which is surrounded by concrete structure.
NJDJ-SED6** 1-1y-4	BDT54	MBCQ39 42-42-43	1042	Sediment	Sample collected at same location as SED5.
NJDJ-S1 1-1y-2	BDT40	MBCQ88 7	1204	Soil	Sample collected at a bearing of 150° and a distance of approximately 350 feet east of radio tower. Sample is a composite of depths between 10 inches and 14 inches.
NJDJ-S2 1-1y-1	BDT41	~~MBCQ90~~ 89 4	1225	Soil	Sample collected at bottom of slight incline of footpath at a perpendicular distance of 15 feet 2 inches from location of S1 to middle of footpath and a distance of 39 feet east along middle of footpath. Sample collected at a depth of 0 inches to 6 inches.
NJDJ-S3 1-1y-1	BDT42	MBCQ90 9	1240	Soil	Sample collected 18 inches southwest of sample S1 perpendicluar to the footpath. Sample collected at a depth of 0 inches to 6 inches.
NJDJ-RIN6	BDT55 1	MBCP01 —	1000	Rinsate	Trowel rinsate collected in the field.

** Duplicate - Indicates that a sample was designated for duplicate anlaysis.

TABLE 2 (CONT'D)
SAMPLE DESCRIPTIONS
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
CASE NO. 13938
APRIL 27, 1990

NUS Sample Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Time	Sample Type	Sample Location
NJDJ-RIN7	BDT56	MBCP02	1015	Rinsate	Bowl rinsate collected in the field.
NJDJ-RIN8	BDT57	MBCP03	1030	Rinsate	Auger rinsate collected in the field.

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

INORGANICS											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-SW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	MBCQ75	MBCQ76	MBCQ77	MBCQ78	MBCQ79	MBCQ80	MBCQ81	MBCQ82	MBCQ83	MBCQ84	MBCQ85
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/kg	mg/kg
Aluminum	662 E	J	743 E	389 E	567 E	J	J	838 E	J	6570	7000
Antimony										J	J
Arsenic		J		J	J	J		J	J	15.4	9.5
Barium	J	J	J	270	J	607	J	J	J	150	196
Beryllium							J			J	
Cadmium											1.8
Calcium	127000	120000	42100	81500	131000	173000	98800 E	73100	117000	9670	7280
Chromium	J		J			J		J	J	45.8 E	37.7 E
Cobalt	J			J	J		J			J	J
Copper										123	328
Iron	20900	11000	5820	6040	20900	40600	2470 E	6080	1940	45100	29300
Lead								4.2 E	9	226 E	531 E
Magnesium	39600	81900	31700	20400	41500	64500	18700 E	15400	185000	3570	3740
Manganese	1890	1390	2290	11400	1940	1260	1270 E	1890	1550	429	647
Mercury										0.71	0.71
Nickel	J				J	J		J		29	34.3
Potassium	12200 E	16500 E	14900 E	J	12900 E	15600 E	7150 E	5160 E	56500 E	J	J
Selenium							6.8 E			J	J
Silver								11 E			J
Sodium	36300	87500	130000	43600	38100	67000	86300 E	56500	1480000	J	J
Thallium											
Vanadium	J	J	J	J	J	J			J	41.6	44.8
Zinc	J		31	J	23.1	37.3	66.3 E	36.8	39.8	425	781

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

INORGANICS											
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1
Traffic Report No.	MBCQ86	MBCQ87	MBCQ95	MBCQ96	MBCQ97	MBCQ98	MBCQ99	N/A	MBCQ40	MBCQ39	MBCQ88
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	N/A	SEDIMENT	SEDIMENT	SOIL
Units	mg/kg	mg/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/kg	mg/kg	mg/kg
Aluminum	6530	5000	J		J	J	J	NR	17100	17700	5940
Antimony	J	J						NR		J	
Arsenic	9.4	27.8 E						NR	16.5	19.8 E	2.3
Barium	165	105						NR	186	137	54.2
Beryllium	J	J		J				NR			J
Cadmium	J					J		NR			
Calcium	19300	3120	J	J			J	NR	20200	22900	2610
Chromium	66.2 E	37.7 E	J	J	J	J	J	NR	57.9 E	52.1 E	12.9 E
Cobalt	J	J						NR	J	18.3	J
Copper	364	318						NR	217	237	31.5
Iron	24700	25500	J	J	J	J	J	NR	33300	35100	11200
Lead	1480 E	214 E			26.8			NR	285 E	268 E	6.6 E
Magnesium	4330	2860	J				J	NR	9130	9300	2900
Manganese	362	211						NR	711	814	248
Mercury	0.65	0.44						NR	0.55	0.89	
Nickel	31.8	32.4						NR	66.7	63	13.2
Potassium	J	J						NR	1810	1940	J
Selenium	J	3.3 E						NR			
Silver								NR			
Sodium	J	2460	J	J	J	J	J	NR	J	J	J
Thallium								NR		J	
Vanadium	40.6	38.6						NR	109	86.9	18.9
Zinc	718	341			J		J	NR	544	515	52.5

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TDD#: 02-9001-1C
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

INORGANICS					
Sample ID No.	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	MBCQ89	MBCQ90	MBCP01	MBCP02	MBCP03
Matrix	SOIL	SOIL	WATER	WATER	WATER
Units	mg/kg	mg/kg	ug/L	ug/L	ug/L
Aluminum	3760	5660	J		
Antimony					
Arsenic	2.4	3.1			
Barium	61.2	66			
Beryllium	J	J	J	J	
Cadmium					
Calcium	J	1160			
Chromium	12.4 E	14.5 E	J	J	
Cobalt	J	J			
Copper	17.2	19.9	J		
Iron	12300	16600	J		J
Lead	12.2 E	53.7 E		J	
Magnesium	2400	2810		J	
Manganese	271	367			
Mercury					
Nickel	12.5	17.4			
Potassium	J	1060			
Selenium					
Silver			J		
Sodium	J	J			
Thallium					
Vanadium	15.1	21.3			
Zinc	43.9	69.6	20.4		

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

VOLATILES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Chloromethane											
Bromomethane											
Vinyl Chloride											
Chloroethane											
Methylene Chloride									J		
Acetone											
Carbon Disulfide											
1,1-Dichloroethene											
1,1-Dichloroethane			J								
Trans-1,2-Dichloroethene (total)											
Chloroform											
1,2-Dichloroethane											
2-Butanone	R	R	R	R			R				
1,1,1-Trichloroethane										J	
Carbon Tetrachloride											
Vinyl Acetate											
Bromodichloromethane											
1,2-Dichloropropane											
cis-1,3-Dichloropropene											
Trichloroethene											
Dibromochloromethane											
1,1,2-Trichloroethane											
Benzene							J	J			
trans-1,3-Dichloropropene											
Bromoform											
4-Methyl-2-Pentanone							J				
2-Hexanone											
Tetrachloroethene											
Toluene											
1,1,2,2-Tetrachloroethane											
Chlorobenzene											
Ethylbenzene								J			
Styrene											
Xylenes (Total)									S		

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

VOLATILES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1
Percent Moisture	38	42	--	--	--	--	--	--
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane	44							
Methylene Chloride						J		
Acetone			B	B		B	B	B
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
Trans-1,2-Dichloroethene (total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone			B					
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene	J							
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-Pentanone								
2-Hexanone								
Tetrachloroethene								
Toluene			B				B	
1,1,2,2-Tetrachloroethane								
Chlorobenzene								
Ethylbenzene		J						
Styrene								
Xylenes (Total)		25						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CLEOTEX (A)
TODB: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								
Methylene Chloride								
Acetone	400 E	340 E					B	
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
Trans-1,2-Dichloroethene (total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone	92 E	62 E						
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene		J						
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-Pentanone		J						
2-Hexanone								
Tetrachloroethene								
Toluene	25 E	43 E						
1,1,2,2-Tetrachloroethane								
Chlorobenzene								
Ethylbenzene	21 E	12 E						
Styrene								
Xylenes (Total)	79 E	44 E						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1/Y	1/Y
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Phenol	R	R	R	R	R				R		
bis(2-Chloroethyl)ether		R									
2-Chlorophenol	R	R	R	R	R				R		
1,3-Dichlorobenzene		R									
1,4-Dichlorobenzene		R									
Benzyl alcohol		R									
1,2-Dichlorobenzene		R									
2-Methylphenol	R	R	R	R	R				R		
bis(2-Chloroisopropyl)ether		R									
4-Methylphenol	R	R	R	R	R				R		
N-Nitroso-di-n-dipropylamine		R									
Hexachloroethane		R									
Nitrobenzene		R									
Isophorone		R									
2-Nitrophenol	R	R	R	R	R				R		
2,4-Dimethylphenol	R	R	R	R	R				R		
Benzoic acid	R	R	R	R	R				R		
bis(2-Chloroethoxy)methane		R									
2,4-Dichlorophenol	R	R	R	R	R				R		
1,2,4-Trichlorobenzene		R									
Naphthalene		R								J	J
4-Chloroaniline	R	R	R	R	R						
Hexachlorobutadiene		R									
4-Chloro-3-Methylphenol	R	R	R	R	R				R		
2-Methylnaphthalene		J								J	J
Hexachlorocyclopentadiene		R									
2,4,6-Trichlorophenol	R	R	R	R	R				R		
2,4,5-Trichlorophenol	R	R	R	R	R				R		
2-Chloronaphthalene		R									
2-Nitroaniline		R									
Dimethylphthalate		R									
Acenaphthylene		R								J	J
2,6-Dinitrotoluene		R									
3-Nitroaniline		R									
Acenaphthene		10 E								J	J
2,4-Dinitrophenol	R	R	R	R	R				R		
4-Nitrophenol	R	R	R	R	R				R		
Dibenzofuran		J								J	
2,4-Dinitrotoluene		R									
Diethylphthalate		R					J				
4-Chlorophenyl-phenyl ether		R									
Fluorene		J								J	J
4-Nitroaniline		R									
4,6-Dinitro-2-methylphenol	R	R	R	R	R				R		
N-nitrosodiphenylamine		R									
4-Bromophenyl-phenyl ether		R									
Hexachlorobenzene		R									

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1/Y	1/Y
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
Pentachlorophenol	R	R	R	R	R				R		
Phenanthrene		J								3300	1900
Anthracene		R								1200	J
Di-n-butylphthalate		R								J	
Fluoranthene		R								7200	3700
Pyrene		R								3300	2200
Butylbenzylphthalate		R									2100
3,3'-Dichlorobenzidine		R									
Benzo(a)anthracene		R								3400	1800
Chrysene		R								4300	2200
bis(2-Ethylhexyl)phthalate		R					J				7300
Di-n-octylphthalate		R									J
Benzo(b)fluoranthene		R								5400 E	2600 E
Benzo(k)fluoranthene		R									
Benzo(a)pyrene		R								2900 E	1200 E
Indeno(1,2,3-cd)pyrene		R								1500 E	J
Dibenz(a,h)anthracene		R								J	
Benzo(g,h,i)perylene		R								1200 E	J

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TOD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

SEMI-VOLATILES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1/Y	1(MED)	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
Phenol								NR
bis(2-Chloroethyl)ether								NR
2-Chlorophenol								NR
1,3-Dichlorobenzene								NR
1,4-Dichlorobenzene	J							NR
Benzyl alcohol								NR
1,2-Dichlorobenzene	J							NR
2-Methylphenol								NR
bis(2-Chloroisopropyl)ether								NR
4-Methylphenol	J							NR
N-Nitroso-di-n-dipropylamine								NR
Hexachloroethane								NR
Nitrobenzene								NR
Isophorone								NR
2-Nitrophenol								NR
2,4-Dimethylphenol								NR
Benzoic acid								NR
bis(2-Chloroethoxy)methane								NR
2,4-Dichlorophenol								NR
1,2,4-Trichlorobenzene								NR
Naphthalene	J							NR
4-Chloroaniline								NR
Hexachlorobutadiene								NR
4-Chloro-3-Methylphenol								NR
2-Methylnaphthalene	J							NR
Hexachlorocyclopentadiene								NR
2,4,6-Trichlorophenol								NR
2,4,5-Trichlorophenol								NR
2-Chloronaphthalene								NR
2-Nitroaniline								NR
Dimethylphthalate								NR
Acenaphthylene	1600							NR
2,6-Dinitrotoluene								NR
3-Nitroaniline								NR
Acenaphthene	J	J						NR
2,4-Dinitrophenol								NR
4-Nitrophenol								NR
Dibenzofuran	J	J						NR
2,4-Dinitrotoluene								NR
Diethylphthalate								NR
4-Chlorophenyl-phenyl ether								NR
Fluorene	J	J						NR
4-Nitroaniline								NR
4,6-Dinitro-2-methylphenol								NR
N-nitrosodiphenylamine								NR
4-Bromophenyl-phenyl ether								NR
Hexachlorobenzene								NR

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE

SEMI-VOLATILES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1/Y	1(MED)	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
Pentachlorophenol								NR
Phenanthrene	5100	77000 E						NR
Anthracene	1500	J						NR
Di-n-butylphthalate		J						NR
Fluoranthene	10000	120000 E						NR
Pyrene	5500	74000 E						NR
Butylbenzylphthalate	3500							NR
3,3'-Dichlorobenzidine								NR
Benzo(a)anthracene	14000	46000 E						NR
Chrysene	5200	49000 E						NR
bis(2-Ethylhexyl)phthalate	10000							NR
Di-n-octylphthalate	J							NR
Benzo(b)fluoranthene	7200 E	J						NR
Benzo(k)fluoranthene	8200 E	39000 E						NR
Benzo(a)pyrene	4200 E	36000 E						NR
Indeno(1,2,3-cd)pyrene	2600 E	J						NR
Dibenz(a,h)anthracene	J							NR
Benzo(g,h,i)perylene	2200 E	J						NR

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	10/Y	1/Y	1/Y	1/Y	1/Y	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Phenol								
bis(2-Chloroethyl)ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl alcohol								
1,2-Dichlorobenzene								
2-Methylphenol								
bis(2-Chloroisopropyl)ether								
4-Methylphenol	J							
N-Nitroso-di-n-dipropylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
Benzoic acid								
bis(2-Chloroethoxy)methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene								
Naphthalene	J	3900						
4-Chloroaniline				R	R	R	R	R
Hexachlorobutadiene								
4-Chloro-3-Methylphenol								
2-Methylnaphthalene		J						
Hexachlorocyclopentadiene								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylphthalate								
Acenaphthylene	J	J						
2,6-Dinitrotoluene								
3-Nitroaniline								
Acenaphthene		J						
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran		1200						
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenyl ether								
Fluorene	J	1700						
4-Nitroaniline								
4,6-Dinitro-2-methylphenol								
N-nitrosodiphenylamine								
4-Bromophenyl-phenyl ether								
Hexachlorobenzene								

SITE NAME: CELOTEX (A)
TOD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

SEMI-VOLATILES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN3
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	10/Y	1/Y	1/Y	1/Y	1/Y	1	1	1
Percent Moisture	45	42	7	4	9	--	--	--
Pentachlorophenol								
Phenanthrene	J	6000	J					
Anthracene	J	2200						
Di-n-butylphthalate								
Fluoranthene	25000	11000	J		J			
Pyrene	17000	7600	J		J			
Butylbenzylphthalate	J		J					
3,3'-Dichlorobenzidine								
Benzo(a)anthracene		4300	J		J			
Chrysene		5400	J		J			
bis(2-Ethylhexyl)phthalate	J		J	J				
Di-n-octylphthalate			J					
Benzo(b)fluoranthene	14000	11000	J		J			
Benzo(k)fluoranthene	J							
Benzo(a)pyrene	13000	3800						
Indeno(1,2,3-cd)pyrene	12000	2800						
Dibenz(a,h)anthracene	J							
Benzo(g,h,i)perylene	J	2200						

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

PESTICIDES											
Sample ID No.	NJDG-GW1	NJDG-GW2	NJDG-GW3	NJDG-GW4	NJDG-GW5(DUP)	NJDG-SW1	NJDG-SW2	NJDG-SW3(MS/MSD)	NJDG-SW4	NJDG-SED1	NJDG-SED2
Traffic Report No.	BDT27	BDT28	BDT29	BDT30	BDT31	BDT32	BDT33	BDT34	BDT35	BDT36	BDT37
Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	SEDIMENT	SEDIMENT
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/kg	ug/kg
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	4	1
Percent Moisture	--	--	--	--	--	--	--	--	--	44	44
alpha-BHC											
beta-BHC											
delta-BHC											
gamma-BHC (Lindane)											
Heptachlor											
Aldrin											
Heptachlor epoxide											
Endosulfan I											
Dieldrin											
4,4'-DDE											
Endrin											
Endosulfan II											
4,4'-DDD											
Endosulfan sulfate											
4,4'-DDT											
Methoxychlor											
Endrin ketone											
alpha-Chlordane											
gamma-Chlordane											
Toxaphene											
Aroclor-1016											
Aroclor-1221											
Aroclor-1232											
Aroclor-1242											
Aroclor-1248											
Aroclor-1254											
Aroclor-1260											

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TE.

PESTICIDES								
Sample ID No.	NJDG-SED3(MS/MSD)	NJDG-SED4	NJDG-RIN1	NJDG-RIN2	NJDG-RIN3	NJDG-RIN4	NJDG-RIN5	NJDG-TBLK1
Traffic Report No.	BDT38	BDT39	BDT47	BDT48	BDT49	BDT50	BDT51	BDT52
Matrix	SEDIMENT	SEDIMENT	WATER	WATER	WATER	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	N/A
Percent Moisture	38	42	--	--	--	--	--	N/A
alpha-BHC								NR
beta-BHC								NR
delta-BHC								NR
gamma-BHC (Lindane)								NR
Heptachlor								NR
Aldrin								NR
Heptachlor epoxide								NR
Endosulfan I								NR
Dieldrin								NR
4,4'-DDE								NR
Endrin								NR
Endosulfan II								NR
4,4'-DDD								NR
Endosulfan sulfate								NR
4,4'-DDT								NR
Methoxychlor								NR
Endrin ketone								NR
alpha-Chlordane								NR
gamma-Chlordane								NR
Toxaphene								NR
Aroclor-1016								NR
Aroclor-1221								NR
Aroclor-1232								NR
Aroclor-1242								NR
Aroclor-1248								NR
Aroclor-1254								NR
Aroclor-1260								NR

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 4/26/90-4/27/90
EPA CASE NO.: 13938 LAB: ENV. CONTROL TECHNOLOGY

PESTICIDES								
Sample ID No.	NJDG-SED5	NJDG-SED6(DUP)	NJDG-S1	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	BDT53	BDT54	BDT40	BDT41	BDT42	BDT55	BDT56	BDT57
Matrix	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	4	4	2	1	1	1	1	1
Percent Moisture	45	43	7	4	9	--	--	--
alpha-BHC				R				
beta-BHC				R				
delta-BHC				R				
gamma-BHC (Lindane)				R				
Heptachlor				R				
Aldrin				R				
Heptachlor epoxide				R				
Endosulfan I				R				
Dieldrin				R				
4,4'-DDE				R				
Endrin				R				
Endosulfan II				R				
4,4'-DDD				R				
Endosulfan sulfate				R				
4,4'-DDT				R	J			
Methoxychlor				R				
Endrin ketone				R				
alpha-Chlordane				R				
gamma-Chlordane				R				
Toxaphene				R				
Aroclor-1016				R				
Aroclor-1221				R				
Aroclor-1232				R				
Aroclor-1242				R				
Aroclor-1248				R				
Aroclor-1254				R				
Aroclor-1260				R				

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SITE NAME: CELOTEX (A)
TDD#: 02-9001-10
SAMPLING DATES: 04/26/90-04/27/90
EPA CASE NO.: 13938
LAB NAME: SKINNER & SHERMAN

INORGANICS					
Sample ID No.	NJDG-S2	NJDG-S3	NJDG-RIN6	NJDG-RIN7	NJDG-RIN8
Traffic Report No.	MBCQ89	MBCQ90	MBCP01	MBCP02	MBCP03
Matrix	SOIL	SOIL	WATER	WATER	WATER
Units	mg/kg	mg/kg	ug/L	ug/L	ug/L
Aluminum	3760	5660	J		
Antimony					
Arsenic	2.4	3.1			
Barium	61.2	66			
Beryllium	J	J	J	J	
Cadmium					
Calcium	J	1160			
Chromium	12.4 E	14.5 E	J	J	
Cobalt	J	J			
Copper	17.2 E	19.9 E	J		
Iron	12800	16600	J		J
Lead	12.2 E	53.7 E		J	
Magnesium	2400	2810		J	
Manganese	271	367			
Mercury					
Nickel	12.5	17.4			
Potassium	J	1060			
Selenium					
Silver			J		
Sodium	J	J			
Thallium					
Vanadium	15.1	21.3			
Zinc	43.9	69.6	20.4		

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

WS8 SMK
02-9001-10

- COPY OF CLP DATA

(REDLINED AND MARKED)

- COMPUTER QA'd PRINTOUT

SITE NAME: Celotex (A)

CASE# AND/OR SAS#: 13938

BRICS#: NJDG

TDD#: 02-9001-10

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Feb. 1990
Number: HW-2
Revision: 10

Case# 13938 Site Celotex(A) Matrix: Soil 9
SDG# MBCQ84 Lab Skinner Water —
Contractor FITQ Reviewer V. Smith Other —

A.2.1 The case description and exceptions, if any, are noted below with reason(s) for rejection or qualification as estimated value(s) J.

The RAS inorganic data package for EPA Case No 13938 SDG# MBCQ84 has been reviewed for total metals analysis validation. This SDG Group includes 9 soil samples (MBCQ39, 40, 84-90). The field blanks for these samples are MBCP01-03, MBCQ95-99 found in SDG Group MBCQ75. The field duplicate samples are MBCQ39+40. The MS/MSD sample is MBCQ86. Data that is of unacceptable quality are noted below with reasons for rejection ~~&~~ flag of estimated.

① The coefficient of correlation of the standard for one lead run, one arsenic run, & two selenium runs is <.995. Therefore the analytes listed below were flagged estimated "J".

Pb: MBCQ84, 85, 88-90, [redacted], 39, 40 + 87, 86
As: MBCQ87, 39
Se: MBCQ84-90, 39, 40

A.2.1 (continuation)

② The CRI for Beryllium, Copper + Zinc is between 50-79%. Therefore the analytes that fell w/i the affected range were flagged estimate "J".

Be: MBCQ39, 40, 84-90

Cu + Zn: no samples in affected range

③ The initial CRI for Chromium + the CRA for Lead + Selenium was between 121-150%. Therefore the positive analytes that fell w/i the affected range were flagged estimated "J".

Cr + Pb: no samples in affected range

(Note: Se would be flagged estimated "J" in MBCQ39 but was previously flagged as per stmt. #)

④ The soil spike sample recovery for Antimony + Chromium is between 10-74%. Therefore these analytes were flagged estimated "J" in MBCQ 39, 40, 84-90

A.2.1 (continuation)

(5) (Note: The coefficient of correlation is .995 for Pb in MBCQ40. This analytes was previously flagged as per Narrative stmt. #1)

A.2.2 Contract-Problems/Non-Compliance

(1) The dilution factors for the analytes listed below were not recorded on Form I's

Pb(50x) = MBCQ39, 85 As (5x) = MBCQ87, 39
Pb(30x) = MBCQ40, 87
Pb(20x) = MBCQ84
Pb(100x) = MBCQ86
Pb(10x) = MBCQ90

(2) Form 5A's spike added concentration should be reported to one decimal place.

MMB Reviewer: _____ Date: _____
Signature

Contractor Reviewer: [signature] Date: 8/13/90
Signature

Verified by: _____ Date: _____

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Feb. 1990
Number: HW-2
Revision: 10

Case# 13938 Site Celotex (A) Matrix: Soil -
SDG# MBCQ75 Lab Skiner Water 17
Contractor FIT2 Reviewer Y. Smith Other -

A.2.1 The case description and exceptions, if any, are noted below with reason(s) for rejection or qualification as estimated value(s) J.

The RAS inoganic data package for EPA Case No. 13938 SDG # MBCQ75, has been reviewed for total metals analysis validation. This SDG group includes 17 water samples (MBCP01-03, MBCQ75-83, 95-99). MBCQ98 is the field blank related to samples MBCQ80-83. The field duplicate samples are MBCQ75 + 79. The MS/MSD samples is MBCQ82. Data that is of unacceptable quality are noted below, with reasons for qualification of estimated or rejection.

(1) All analytes in samples MBCQ81, 98 + 99 were flagged estimated (J) due to the pH of these samples being ~~less~~ greater than 2.

A.2.1 (continuation)

② The correlation coefficient of the standards for selenium was <.995 therefore selenium was flagged estimated "J" in MBCQ 75-80, 82, 83, 95-97 + MBCP01-03

(Note. Se would be flagged "J" in MBCQ 81, 98+99 but was previously flagged as per stmt. #1)

③ The CRI for Copper + the CRA for one lead run was between 50-79% Therefore the analytes listed below that were w/ the affected range were flagged estimated "J".

Cu: MBCP01-03, MBCQ 75-80, 82, 83, 95-97
Pb: MBCP03, MBCQ 75-80, 82, 95+96

(Note Cu + Pb would also be flagged "J" but were previously flagged in MBCQ 81, 98+99 as per stmt #1.)

④ The CRA for Selenium and one lead run was between 121-150% Therefore the analytes listed below that are present + w/ the affected range were flagged estimated "J"

Pb: MBCP02

(Note Se would be flagged "J" in MBCQ81 but was previously flagged as per stmt. #1)

A.2.1 (continuation)

(5) The aqueous spike sample recovery for Aluminum Silver & Thallium was between 30-74%. Therefore the analytes listed below were flagged estimated "J":

Al: MBCP01-03, MBCQ75-80, 82, 83, 95-97
Ag: MBCP01-03, MBCQ75-80, 82, 83, 95-97
Tl: MBCP01-03, MBCQ75-80, 82, 83, 95-97

(Note: Al, Ag & Tl would be flagged estimated in MBCQ81, 98 & 99 but were previously flagged as per narrative stmt #1.)

(6) (Note: The RPD for Aluminum in the laboratory duplicate is 750% ~~& the difference is 7CRDL~~. 8/13/90
Therefore Al would be flagged estimated "J" in MBCP01-03, MBCQ75-80, 82, 83, 95-97 as per stmt #5 & MBCQ81, 98 & 99 as per stmt #1.)

(7) The ICP Serial Dilution for Potassium is 710%D therefore all analytes 710 x IDL were flagged estimated "J":

K: MBCQ75-80, 82, 83

(Note: K in MBCQ81 would be flagged estimated but was previously flagged as per narrative stmt. #1)

A.2.2 Contract-Problems/Non-Compliance

The dilution factor for the analytes listed below were not recorded on Form I's

Tl MBCQ83 (5x)
Na MBCQ83 (5x)

MMB Reviewer: _____ Date: _____
Signature

Contractor Reviewer: [illegible] Date: 8/13/90
Signature

Verified by: _____ Date: _____

CONTRACT NON-COMPLIANCE (SMD REPORT)

Regional Review of Uncontrolled Hazardous Waste Site Contract Laboratory Data Package

CASE NO. _____

The hardcopied (laboratory name) _____ Inorganic data package received at Region II has been reviewed and the quality assurance a performance data summarized. The data reviewed included:

SMD Sample No.: _____

Conc. & Matrix: _____

Contract No. WA87-K025,K026,K027(SOW787) requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMD. Th general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Matrix Spike Results
- Calibration Standards Results
- Duplicate Analysis Results
- Blank Analysis Results
- MSA Results

Items of non-compliance with the above contract are described below.

Comments: _____

N/A

Reviewer's Initial _____ Date _____

ERO/MAILING LIST FOR DATA REVIEWERS

1. USEPA Region I (ESD)
60 Westview Street
Lexington, MA 02173
Deb Szaro
(617) 861-4312
CT, ME, MA, NH, RI, VT
CAA, Resource Analysts, York, EJI, Skinner, TMA

2. USEPA Region II (ESD)
Woodbridge Avenue
Edison, New Jersey 08837
Lisa Gatton Vidulich
(201) 321-6676
NJ, NY, PR, VI
Century, Chemtech, US Test, Nanco, ETC, Gadson, EMS, Galson, ICM

3. USEPA Region III (CRL)
839 Bestgate Road
Annapolis, MD 21401
Chuck Sands
(301) 266-9180
DE, MD, PA, VA, WV, DC
Cantec, Hitman, JTC, MACK, VERSAR, ITAS, Weston, MMES, EA Engineering Subject Tech., Key PA

4. USEPA Region IV (ESD)
Analytical Support Branch
College Station Road
Athens, GA 30613
Tom Barnett, Jr.
(404) 546-3112
AL, FL, GA, KY, MS, NC, SC, TN
Compuchem, EPS, ESE, PBS&J, Triangle Labs

5. USEPA Region V (ESD)
536 South Clark Street
Tenth Floor, CRL
Chicago, IL 60605
Pat Churilla
312-353-9087
IL, IN, MI, MN, OH, WI
NLE, IAI/ERG

6. USEPA Region VI (ESD)
Monterey Park Plaza, Bldg. C
6608 Hornwood Drive
Houston, TX 77074
David Stockton
(713) 953-3425
AR, LA, NM, TX, OK
ANACON, RADIAN, SPECS, EIS, Glochem Research, Inc., SPL Inc., SWRI, Allied, Key TX, EIRA

7. USEPA Region VII Laboratory
25 Funston Road
Kansas City, KS 66115
Debra Morey
(913) 236-3881
IO, KS, NB, MO
Wilson, Kansas City Scientific Enterprises, Eagle Pitcher

8. USEPA Region VIII Laboratory
BOX 25366
Denver Federal Center
Lakewood, CO 80225
Eva Hoffman
(303) 236-7371
CO, ND, SD, UT, WY, MT
ACCU, CSMRI, RMAL, Data Chem, Canref

9. USEPA Region IX (ESD)
QA Management Section
215 Fremont Street
San Francisco, CA 94105
Kent Kitchingman
(415) 974-0924
AZ, CA, HI, NV, American Samoa, Guam Trust Territories of Pacific Islands, Wake Island
ALI, CAL Weston, S-Cubed, IT-CA, Vegas

10. USEPA Region X Laboratory
P.O. BOX 549
Manchester, WA 98353
Gerald Muth
(206) 442-0370
AK, ID, OR, WA
Lauchs Testing Labs, Century Testing Labs (For VOA Only), Weyerhauser Co. Columbia Testing, Silver Valley

11. Carla Dempsey - (OS-230)
USEPA
401 M Street, S.W.
Washington, DC 20460
FTS 382-5746

12. Edward Kantor
USEPA
EMSL-LV
944 E. Harmon Avenue
BOX 93478
Las Vegas, NV 89119

13. Sample Management Office
Viar and Company
P.O. BOX 818
Alexandria, VA 22313

TMA
Thermo Analytical Inc.

Skinner & Sherman Laboratories Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200

Federal Express Airbill 5235950930

31 May 1990

USEPA Contract Laboratory Program (CLP)
Sample Management Office (SMO)
300 North Lee Street, Suite 200
Alexandria, VA 22314

Attention: Linda Boynton

Dear Ms. Boynton:

Enclosed are the Sample Data package for the Inorganic Analyses of Case 13938, SDG#MBCQ75. The samples were analyzed under Skinner and Sherman Work Order 9004258.

Please feel free to call if there are any questions concerning the enclosed.

Sincerely,

SKINNER AND SHERMAN LABORATORIES, INC.

Richard Purdy
Contract Laboratory Program
Program Manager

RP/cd

Encl.

cc: Data Audit Staff, USEPA EMSL-LV, Federal #5235950926
Richard Spear, USEPA Region 11, Federal #5235950915

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

SOW No.: 7/88

EPA Sample No.	Lab Sample ID.
MBCP01	04258-01S
MBCP02	04258-02S
MBCP03	04258-03S
MBCQ75	04258-04S
MBCQ76	04258-05S
MBCQ77	04258-06S
MBCQ78	04258-07S
MBCQ79	04258-08S
MBCQ80	04258-09S
MBCQ81	04258-10S
MBCQ82	04258-11S
MBCQ82D	04258-11S2
MBCQ82S	04258-11DS
MBCQ83	04258-12S
MBCQ95 — Trowel	04258-13S
MBCQ96 - Bowl Pin	04258-14S
MBCQ97 Auger	04258-15S
MBCQ98	04258-16S
MBCQ99 Scoop	04258-17S

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: RICHARD PURDY

Date: 31 MAY '90 Title: CLP MANAGER.

COVER PAGE - IN Rev.6/89

TMA
Thermo Analytical Inc.

Skinner & Sherman Laboratories Inc.
300 Second Avenue
Post Office Box 521
Waltham, MA 02254-0521
(617) 890-7200

Federal Express Airbill 5235950930

31 May 1990

USEPA Contract Laboratory Program (CLP)
Sample Management Office (SMO)
300 North Lee Street, Suite 200
Alexandria, VA 22314

Attention: Linda Boynton

Dear Ms. Boynton:

Enclosed are the Sample Data package for the Inorganic Analyses of Case 13938, SDG#MBCQ84. The samples were analyzed under Skinner and Sherman Work Order 9004257.

Please feel free to call if there are any questions concerning the enclosed.

Sincerely,

SKINNER AND SHERMAN LABORATORIES, INC.

Richard Purdy
Contract Laboratory Program
Program Manager

RP/cd

Encl.

cc: Data Audit Staff, USEPA EMSL-LV, Federal #5235950926
Richard Spear, USEPA Region 11, Federal #5235950915

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

SOW No.: 7/88

EPA Sample No.	Lab Sample ID.
MBCQ39	04257-01S
MBCQ40	04257-02S
MBCQ84	04257-03S
MBCQ85	04257-04S
MBCQ86	04257-05S
MBCQ86D	04257-05S2
MBCQ86S	04257-05DS
MBCQ87	04257-06S
MBCQ88	04257-07S
MBCQ89	04257-08S
MBCQ90	04257-09S

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Richard Purdy Name: RICHARD PURDY

Date: 31 May '90 Title: CLP MANAGER.

S. EPA - CLP

1

: ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ75

TCI/JDG

Lab

Lab

Matr

Leve

% S

Contract: 68-W8-0006

13938 SAS No.:

SDG No.: MBCQ75

Lab Sample ID: 04258-04S

Date Received: 04/27/90

g/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	662.00		N*J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	100.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	127000.00			P
7440-47-3	Chromium	4.20	B		P
7440-48-4	Cobalt	4.40	B		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	20900.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	39600.00			P
7439-96-5	Manganese	1890.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.90	B		P
7440-09-7	Potassium	12200.00		E J	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	36300.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	6.60	B		P
7440-66-6	Zinc	10.00	B		P
	Cyanide				NR

Color Before: GREY

Clarity Before: CLOUDY

Texture:

Color After: GREY

Clarity After: CLOUDY

Artifacts:

Comments:

000005

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ76

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-05S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	97.40	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	6.60	B		F
7440-39-3	Barium	162.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	120000.00			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	11000.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	81900.00			P
7439-96-5	Manganese	1390.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	16500.00		E J	P
7782-49-2	Selenium	3.00	U	W J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	87500.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	4.40	B		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ77

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-06S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	743.00		N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		P
7440-39-3	Barium	91.10	B		F
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	42100.00			P
7440-47-3	Chromium	6.30	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	5820.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	31700.00			P
7439-96-5	Manganese	2290.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	14900.00		E J	P
7782-49-2	Selenium	3.00	U	W J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	130000.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	5.20	B		P
7440-66-6	Zinc	31.00			P
	Cyanide				NR

Color Before: GREY Clarity Before: CLOUDY Texture:

Color After: GREY Clarity After: CLOUDY Artifacts:

Comments:

000007

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ78

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-07S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	389.00		N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.50	B		F
7440-39-3	Barium	270.00			P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	81500.00			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	30.30	B		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	6040.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	20400.00			P
7439-96-5	Manganese	11400.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	4090.00	B	E J	P
7782-49-2	Selenium	3.00	U	W J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	43600.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	3.80	B		P
7440-66-6	Zinc	9.60	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ79

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-08S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	567.00		N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.20	B		F
7440-39-3	Barium	103.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	131000.00			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	5.70	B		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	20900.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	41500.00			P
7439-96-5	Manganese	1940.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	15.40	B		P
7440-09-7	Potassium	12900.00		E J	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	38100.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	4.10	B		P
7440-66-6	Zinc	23.10			P
	Cyanide				NR

Color Before: GREY Clarity Before: CLOUDY Texture:

Color After: GREY Clarity After: CLOUDY Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ80

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-09S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.10	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	7.80	B		F
7440-39-3	Barium	607.00			P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	173000.00			P
7440-47-3	Chromium	6.30	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	40600.00			P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	64500.00			P
7439-96-5	Manganese	1260.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.60	B		P
7440-09-7	Potassium	15600.00		EJ	P
7782-49-2	Selenium	3.00	U	W J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	67000.00			P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	6.70	B		P
7440-66-6	Zinc	37.30			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ81

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-10S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.50	B	N*	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	114.00	B		P
7440-41-7	Beryllium	1.40	B		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	98800.00			P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	5.00	B		P
7440-50-8	Copper	5.00	U		P
7439-89-6	Iron	2470.00			P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	18700.00			P
7439-96-5	Manganese	1270.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	7150.00		E	P
7782-49-2	Selenium	6.80		S	F
7440-22-4	Silver	3.00	U	N*	P
7440-23-5	Sodium	86300.00			P
7440-28-0	Thallium	3.00	U	NW	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	66.30			P
	Cyanide				NR

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ82

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-11S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	838.00		N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	3.20	B		F
7440-39-3	Barium	167.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	73100.00			P
7440-47-3	Chromium	7.10	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	6080.00			P
7439-92-1	Lead	4.20		J	F
7439-95-4	Magnesium	15400.00			P
7439-96-5	Manganese	1890.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	6.00	B		P
7440-09-7	Potassium	5160.00		E J	P
7782-49-2	Selenium	3.00	U	UJ	F
7440-22-4	Silver	11.00		N* J	P
7440-23-5	Sodium	56500.00			P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	36.80			P
	Cyanide				NR

Color Before: GREY Clarity Before: CLOUDY Texture:

Color After: GREY Clarity After: CLOUDY Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ83

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-12S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	160.00	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	4.20	B		F
7440-39-3	Barium	112.00	B		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	117000.00			P
7440-47-3	Chromium	5.60	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	1940.00			P
7439-92-1	Lead	9.00			F
7439-95-4	Magnesium	185000.00			P
7439-96-5	Manganese	1550.00			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	56500.00		E J	P
7782-49-2	Selenium	3.00	U	MW J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	1480000.00			P
7440-28-0	Thallium	15.00	U	NW J	F
7440-62-2	Vanadium	3.50	B		P
7440-66-6	Zinc	39.80			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Na + Tl = 5 [illegible]

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ84

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-03S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 59.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6570.00			P
7440-36-0	Antimony	6.20	B	N J	P
7440-38-2	Arsenic	15.40			F
7440-39-3	Barium	150.00			P
7440-41-7	Beryllium	0.45	B	J	P
7440-41-7	Cadmium	0.33	U		P
7440-70-2	Calcium	9670.00		*	P
7440-47-3	Chromium	45.80		N J	P
7440-48-4	Cobalt	5.80	B		P
7440-50-8	Copper	123.00		*	P
7439-89-6	Iron	45100.00			P
7439-92-1	Lead	226.00		* J	F
7439-95-4	Magnesium	3570.00			P
7439-96-5	Manganese	429.00			P
7439-97-6	Mercury	0.71			CV
7440-02-0	Nickel	29.00			P
7440-09-7	Potassium	758.00	B		P
7782-49-2	Selenium	1.00	B	W J	F
7440-22-4	Silver	0.98	U		P
7440-23-5	Sodium	770.00	B		P
7440-28-0	Thallium	0.33	U		F
7440-62-2	Vanadium	41.60			P
7440-66-6	Zinc	425.00			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES, LEAVES, TWIGS, & ROOTS

Pb · 20 V [illegible]

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ85

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-04S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 56.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7000.00			P
7440-36-0	Antimony	7.10	B	N J	P
7440-38-2	Arsenic	9.50			F
7440-39-3	Barium	196.00			P
7440-41-7	Beryllium	0.33	U	J	P
7440-41-7	Cadmium	1.80			P
7440-70-2	Calcium	7280.00		*	P
7440-47-3	Chromium	87.70		N J	P
7440-48-4	Cobalt	9.10	B		P
7440-50-8	Copper	328.00		*	P
7439-89-6	Iron	29300.00			P
7439-92-1	Lead	531.00		* J	F
7439-95-4	Magnesium	3740.00			P
7439-96-5	Manganese	647.00			P
7439-97-6	Mercury	0.71			CV
7440-02-0	Nickel	34.30			P
7440-09-7	Potassium	501.00	B		P
7782-49-2	Selenium	1.20	B	W J	F
7440-22-4	Silver	1.40	B		P
7440-23-5	Sodium	396.00	B		P
7440-28-0	Thallium	0.35	U		F
7440-62-2	Vanadium	44.80			P
7440-66-6	Zinc	781.00			P
	Cyanide				NR

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

. LEAVES, STONES, TWIGS, & ROOTS

Po: 5 Dilution

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ86

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-05S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 61.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6530.00			P
7440-36-0	Antimony	4.70	B	N J	P
7440-38-2	Arsenic	9.40			F
7440-39-3	Barium	165.00			P
7440-41-7	Beryllium	0.45	B	J	P
7440-41-7	Cadmium	1.40	B		P
7440-70-2	Calcium	19300.00		*	P
7440-47-3	Chromium	66.20		N J	P
7440-48-4	Cobalt	8.60	B		P
7440-50-8	Copper	364.00		*	P
7439-89-6	Iron	24700.00			P
7439-92-1	Lead	1480.00		*J	F
7439-95-4	Magnesium	4330.00			P
7439-96-5	Manganese	362.00			P
7439-97-6	Mercury	0.65			CV
7440-02-0	Nickel	31.80			P
7440-09-7	Potassium	508.00	B		P
7782-49-2	Selenium	1.20	B	W J	F
7440-22-4	Silver	0.96	U		P
7440-23-5	Sodium	378.00	B		P
7440-28-0	Thallium	0.32	U		F
7440-62-2	Vanadium	40.60			P
7440-66-6	Zinc	718.00			P
	Cyanide				NR

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

STONES, TWIGS, LEAVES, & ROOTS

PD = 100 x Dilution

000006

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ87

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-06S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 60.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5000.00			P
7440-36-0	Antimony	5.60	B	N J	P
7440-38-2	Arsenic	27.80		J	F
7440-39-3	Barium	105.00			P
7440-41-7	Beryllium	0.56	B	J	P
7440-41-7	Cadmium	0.30	U		P
7440-70-2	Calcium	3120.00		*	P
7440-47-3	Chromium	37.70		N J	P
7440-48-4	Cobalt	6.30	B		P
7440-50-8	Copper	318.00		*	P
7439-89-6	Iron	25500.00			P
7439-92-1	Lead	214.00		*S J	F
7439-95-4	Magnesium	2860.00			P
7439-96-5	Manganese	211.00			P
7439-97-6	Mercury	0.44			CV
7440-02-0	Nickel	32.40			P
7440-09-7	Potassium	754.00	B		P
7782-49-2	Selenium	3.30		J	F
7440-22-4	Silver	0.90	U		P
7440-23-5	Sodium	2460.00			P
7440-28-0	Thallium	0.31	U		F
7440-62-2	Vanadium	38.60			P
7440-66-6	Zinc	341.00			P
	Cyanide				NR

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

STONES, TWIGS, LEAVES, & ROOTS

As [illegible]

Pb [illegible]

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ95

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-13S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	70.30	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	59.20	B		P
7440-47-3	Chromium	8.10	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	36.40	B		P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	64.90	B		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	1950.00	B		P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ96

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-14S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13.00	U	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.40	B		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	63.40	B		P
7440-47-3	Chromium	4.60	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	26.50	B		P
7439-92-1	Lead	2.00	U	W J	F
7439-95-4	Magnesium	54.00	U		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	256.00	B		P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ97

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-15S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	34.50	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	25.00	U		P
7440-47-3	Chromium	4.60	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	24.40	B		P
7439-92-1	Lead	26.80			F
7439-95-4	Magnesium	54.00	U		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	W J	F
7440-22-4	Silver	3.00	U	N* J	P
7440-23-5	Sodium	723.00	B		P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	7.70	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

000016

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ98

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-16S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15.50	B	N*	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	2.40	B		P
7440-70-2	Calcium	25.00	U		P
7440-47-3	Chromium	7.60	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U		P
7439-89-6	Iron	22.30	B		P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	54.00	U		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U		F
7440-22-4	Silver	3.00	U	N*	P
7440-23-5	Sodium	503.00	B		P
7440-28-0	Thallium	3.00	U	N	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

000017

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ99

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-17S

Level (low/med): LOW Date Received: 04/27/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25.70	B	N*	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	79.10	B		P
7440-47-3	Chromium	7.60	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U		P
7439-89-6	Iron	42.20	B		P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	55.60	B		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	W	F
7440-22-4	Silver	3.00	U	N*	P
7440-23-5	Sodium	336.00	B		P
7440-28-0	Thallium	3.00	U	N	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.50	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ40

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-02S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 56.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17100.00			P
7440-36-0	Antimony	4.00	U	N J	P
7440-38-2	Arsenic	16.50			F
7440-39-3	Barium	186.00			P
7440-41-7	Beryllium	0.34	U	J	P
7440-41-7	Cadmium	0.34	U		P
7440-70-2	Calcium	20200.00		*	P
7440-47-3	Chromium	57.90		N J	P
7440-48-4	Cobalt	16.80	B		P
7440-50-8	Copper	217.00		*	P
7439-89-6	Iron	33800.00			P
7439-92-1	Lead	285.00		*+ J	F
7439-95-4	Magnesium	9130.00			P
7439-96-5	Manganese	711.00			P
7439-97-6	Mercury	0.55			CV
7440-02-0	Nickel	66.70			P
7440-09-7	Potassium	1810.00			P
7782-49-2	Selenium	0.69	U	W J	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	655.00	B		P
7440-28-0	Thallium	0.34	U		F
7440-62-2	Vanadium	109.00			P
7440-66-6	Zinc	544.00			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LEAVES & ROOTS

1.

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ39

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-01S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 56.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17700.00			P
7440-36-0	Antimony	4.20	B	N J	P
7440-38-2	Arsenic	19.80		S J	F
7440-39-3	Barium	187.00			P
7440-41-7	Beryllium	0.35	U	J	P
7440-41-7	Cadmium	0.35	U		P
7440-70-2	Calcium	22900.00		*	P
7440-47-3	Chromium	52.10		N J	P
7440-48-4	Cobalt	18.30			P
7440-50-8	Copper	237.00		*	P
7439-89-6	Iron	35100.00			P
7439-92-1	Lead	268.00		*S J	F
7439-95-4	Magnesium	9300.00			P
7439-96-5	Manganese	814.00			P
7439-97-6	Mercury	0.89			CV
7440-02-0	Nickel	63.00			P
7440-09-7	Potassium	1940.00			P
7782-49-2	Selenium	0.70	U	W J	F
7440-22-4	Silver	1.00	U		P
7440-23-5	Sodium	608.00	B		P
7440-28-0	Thallium	0.40	B		F
7440-62-2	Vanadium	86.90			P
7440-66-6	Zinc	515.00			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts: YES

Comments:

LEAVES & ROOTS

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ88

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-07S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 92.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5940.00			P
7440-36-0	Antimony	2.40	U	N J	P
7440-38-2	Arsenic	2.30			F
7440-39-3	Barium	54.20			P
7440-41-7	Beryllium	0.47	B	J	P
7440-41-7	Cadmium	0.20	U		P
7440-70-2	Calcium	2610.00		*	P
7440-47-3	Chromium	12.90		N J	P
7440-48-4	Cobalt	5.10	B		P
7440-50-8	Copper	31.50		*	P
7439-89-6	Iron	11200.00			P
7439-92-1	Lead	6.60		* J	F
7439-95-4	Magnesium	2900.00			P
7439-96-5	Manganese	248.00			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	13.20			P
7440-09-7	Potassium	731.00	B		P
7782-49-2	Selenium	0.42	U	J	F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	510.00	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	18.90			P
7440-66-6	Zinc	52.50			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES & ROOTS

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ89

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-08S

Level (low/med): LOW Date Received: 04/28/90

Solids: 97.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3760.00			P
7440-36-0	Antimony	2.40	U	N J	P
7440-38-2	Arsenic	2.40			F
7440-39-3	Barium	61.20			P
7440-41-7	Beryllium	0.47	B	J	P
7440-41-7	Cadmium	0.20	U		P
7440-70-2	Calcium	963.00	B	*	P
7440-47-3	Chromium	12.40		N J	P
7440-48-4	Cobalt	5.60	B		P
7440-50-8	Copper	17.20		*	P
7439-89-6	Iron	12800.00			P
7439-92-1	Lead	12.20		* J	F
7439-95-4	Magnesium	2400.00			P
7439-96-5	Manganese	271.00			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	12.50			P
7440-09-7	Potassium	905.00	B		P
7782-49-2	Selenium	0.38	U	J	F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	73.30	B		P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	15.10			P
7440-66-6	Zinc	43.90			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES & ROOTS

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ90

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-09S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 91.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5660.00			P
7440-36-0	Antimony	2.40	U	N J	P
7440-38-2	Arsenic	3.10			F
7440-39-3	Barium	66.00			P
7440-41-7	Beryllium	0.47	B	J	P
7440-41-7	Cadmium	0.20	U		P
7440-70-2	Calcium	1160.00		*	P
7440-47-3	Chromium	14.50		N J	P
7440-48-4	Cobalt	8.80	B		P
7440-50-8	Copper	19.90		*	P
7439-89-6	Iron	16600.00			P
7439-92-1	Lead	53.70		* J	F
7439-95-4	Magnesium	2810.00			P
7439-96-5	Manganese	367.00			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	17.40			P
7440-09-7	Potassium	1060.00			P
7782-49-2	Selenium	0.41	U	J	F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	77.10	B		P
7440-28-0	Thallium	0.20	U		F
7440-62-2	Vanadium	21.30			P
7440-66-6	Zinc	69.60			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES & ROOTS

Pb - 10x [illegible]

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCP01

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-01S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33.20	B	N* J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.40	B		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	25.00	U		P
7440-47-3	Chromium	5.80	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	6.30	B	J	P
7439-89-6	Iron	26.90	B		P
7439-92-1	Lead	2.00	U		F
7439-95-4	Magnesium	54.00	U		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	4.00	B	N* J	P
7440-23-5	Sodium	41.00	U		P
7440-28-0	Thallium	3.00	U	NW J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	20.40			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCP02

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-02S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13.00	U	N*J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.80	B		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	25.00	U		P
7440-47-3	Chromium	7.00	B		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	6.00	U		P
7439-92-1	Lead	2.90	B	J	F
7439-95-4	Magnesium	111.00	B		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N*J	P
7440-23-5	Sodium	41.00	U		P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

000003

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCP03

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ75

Matrix (soil/water): WATER Lab Sample ID: 04258-03S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13.00	U	N*J	P
7440-36-0	Antimony	12.00	U		P
7440-38-2	Arsenic	2.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-41-7	Cadmium	1.00	U		P
7440-70-2	Calcium	25.00	U		P
7440-47-3	Chromium	4.00	U		P
7440-48-4	Cobalt	4.00	U		P
7440-50-8	Copper	5.00	U	J	P
7439-89-6	Iron	20.70	B		P
7439-92-1	Lead	2.00	U	J	F
7439-95-4	Magnesium	54.00	U		P
7439-96-5	Manganese	1.00	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.00	U		P
7440-09-7	Potassium	89.00	U	E	P
7782-49-2	Selenium	3.00	U	J	F
7440-22-4	Silver	3.00	U	N*J	P
7440-23-5	Sodium	41.00	U		P
7440-28-0	Thallium	3.00	U	N J	F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

000004

ENCOTEC

ENVIRONMENTAL
CONTROL
TECHNOLOGY
CORPORATION

June 07, 1990

Ms. Linda Boynton
U.S. EPA Contract Laboratory Program
Sample Management Office (SMO)
209 Madison Street
Suite 200
Alexandria, VA 22314

RE: Case 13938 Diskette and Data Package Deliverable

Dear Linda,

Please find the enclosed diskette and data package deliverable for Case 13938. Additional copies of the data package are being sent to EMSL-LV and Region II.

If you have any questions about this or any other matter, please feel free to contact me.

Very truly yours,

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION

C. Michael O'Quinn (crn)

C. Michael O'Quinn
Assistant Laboratory Manager

CMO/crn

Enclosure

cc: EMSL-LV
Region II

75100

RECEIVED
JUN 11 1990
S&A BRANCH

NARRATIVE

Case 13938

A total of twenty-seven (27) samples were received by ENCOTEC on April 28, 1990 and were scheduled for Organics Analysis under Contract #68-D9-0033, first bid lot. Please refer to the following table for vital information that pertains to this case.

SDG #: BDT27

Table 1.0

SAMPLE ANALYZED

	Actual Samples	QC Samples	Re-Run Samples	Total Billable Analyses
Volatile Analyses	18	2	0	20
Semivolatile Analyses	16	2	6	24
Pesticide/PCB Analyses	17	2	0	19

Total Cumulate Billable Full Analyses: 19 + 1 Volatile + 5 Semivolatiles

This Deliverables Package is assembled in accordance with instructions in Section B, 2/88 revision of the Contract Laboratory Program - Statement of Work. A copy of this deliverable has been distributed to Region II, the Sample Management Office (SMO) and EMSL-LV. In addition a sample Summary Data Package and Diskette Deliverable has been sent to SMO.

The following is a detailed description of quality control sample, shipment and/or analytical problems that were encountered in the processing of these samples.

Sample Control/Sample Custody

Samples from this case were received by Federal Express courier on April 27 and 28, 1990. All samples were received in good condition. However, there were no sample tages present with this case. Also, we were supposed to have four water samples for sample BDT49 and four water samples for BDT50 but SMO - Region II incorrectly labeled two BDT50 bottles as BDT49. A phone call was made to Region II and they told us to change the bottles to the correct sample. Samples were scheduled for analysis.

Extraction/Sample Preparation

Water samples BDT27-35, 47-51 were extracted for pesticide/pcb and semivolatile analysis on 04/30/90 and 05/01/90. All extracts were then processed according to CLP protocol and given to the GC and GC/MS groups for analysis on 05/11/90. Samples BDT27-31,35 were re-extracted for BNA analysis to confirm low acid recovery due to matrix interference.

Two low level method blanks showed BNA compounds and were re-extracted on 06/01/90 along with Matrix spike and matrix spike duplicate to confirm the cleanliness of the method blanks. These extracts were given to GC/MS on 06/03/90.

Volatile Analyses

The volatile fraction for Case #13938, SDG#27 ran without major difficulties. One problem encountered with the samples analyzed on May 2 was that a power surge occurred midway in the 12-hour sequence. After the instrument was brought back on-line, the operator mistakenly reset the data to May 2 when it was actually May 3. The sample analysis times follow a 12-hour sequence however. See the BFB form from May 2 in the volatile QC summary for details.

The method blanks contained Acetone (CAS #67-64-1), Methylene chloride (CAS #75-09-2), 2-Butanone (CAS #78-93-3), and Toluene (CAS #108-88-3) at acceptable levels. Acetone, Methylene cholride, and 2-Butanone are all common lab contaminants. The Toluene contamination has been linked to the current building construction.

Most of the samples did not contain any HSL compounds. BDT29 contained 1,1-Dichloroethane (CAs #75-34-3) but at a level less than the contract required quantitation level (CRQL). BDT33 and BDT34 contained Benzene (CAS #71-43-2) but at a level less than CRQL. In addition, BDT34 also contained Ethylbenzene (CAS #100-41-4) and Total Xylenes (CAS #1330-20-7) at a level less than CRQL.

Overall, the QA/QC was excellent. All of the surrogate percent recoveries were well within contract required limits. A matrix spike and matrix spike duplicate were analyzed to confirm any interferences in the water matrix. All of the percent recoveries and relative percent differences were well within contract advisory limits.

Semivolatile Analysis

Case #13938, SDG #BDT27 was received by ENCOTEC on April 27 and 28, 1990. The case was run with relatively few problems. Generally, the QA/QC was good.

The method blanks were analyzed with any trouble. They were found to contain no target or tentatively identified compounds.

The sample data shows that several samples contained both target and tentatively identified compounds (please see sample data package). The following samples were extracted outside of holding times: BDT27, BDT29RE, BDT30RE, BDT31RE and BDT35RE.

This was done to replicate the matrix interference that caused the acid surrogate recoveries to be out. Sample BDT28RE was re-extracted late because the original sample vial broke in the freezer and resulted in all sample volume evaporating.

QA/QC was good excepting the poor acid surrogate recoveries due to matrix interference. All EICPs and retention times were within contract required limits. The matrix spike and matrix spike duplicate analyses showed nearly all RPD and percent recoveries within contract suggested limits.

Pesticide/PCB Analysis

The pesticide portion of case 13938 was completed without difficulty. The QA/QC for these low level waters was excellent with 0 out of 24 surrogate recoveries outside QC limits. The QA/QC for the MS/MSD's was also excellent with 0 out of 12 compounds outside limits, 0 out of 6 RPD's outside limits on the first set, 0 out of 12 outside limits, and 1 out of 6 RPD's for the second set. All blanks were determined to be free of HSL pesticides/PCBs above CRQL.

A special note should be mentioned concerning form 8. The ZZZZZ's indicate samples run as part of a 2nd sample delivery group. Also the variation of the time analyzed between 1820-0704 and 0925-1126 was due to a power failure that occurred during the run.

The following special flags are used by ENCOTEC in the pesticide/PCB analysis.

X-flag : The X flag denotes manually entered data. This always occurs on multi-component quantitations and sometimes occurs on individual pesticides when the analyst had to correct the integration of a peak.

Z-flag : The Z flag indicates a poor agreement between values obtained on a quantitation using both columns. When the quantitation on both columns gives a ratio from 0.7 to 1.4, a confirmation is assumed. If the ratio ranges above 1.4 but below 1.7 or below 0.7 but above 0.5, then there is some degree of uncertainty as to the validity of the confirmation. A Z flag is then added to indicate the suspect data. Ratios above 1.7 or below 0.5 are considered false postivies and are not reported. GC/MS confirmation is performed on all quantitations if the concentration is great enough. If GC/MS confirms a compound, it is reported without regard to the ratio.

J-flag : The J flag is used to indicate the presence of HSL pesticides and/or PCBs below the CRDL. In order to use this flag, the ratio MUST be between 0.7 and 1.4 A J flag is not given to any compound quantitatied lower than five times below the CRQL.

Y-flag : The Y flag is used to indicate that quantitation was performed on the secondary dilution of a sample.

Sample Summary

The following samples within SDG BDT27 were determined to be free of all HSL pesticides/PCBs above CRQLs; BDT27, BDT28, BDT29, BDT30, BDT31, BDT32, BDT33, BDT34, BDT35, BDT47, BDT48, BDT49, BDT50, BDT51, BDT55, BDT56, and BDT57.

Any technical questions regarding the data present in this deliverable should be addressed to the individual whose name appears at the end of this case narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions implied or detailed above. Release of the information contained in this hardcopy data package and in the computer - readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

C. Michael O'Quinn (crn) 6/7/90

C. Michael O'Quinn
Assistant Laboratory Manager
CLP Project Manager

CMO/crn
75100

ATTACHMENT 1
SOP NO. HW-6

TOTAL REVIEW

PAGE __OF__

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 13938 SDG No. BDT27 + BDT36 LABORATORY Encotec SITE Celotex

DATA ASSESSMENT:

The current functional guidelines (1988) for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable),or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Reviewer's Signature: Susan [illegible] Date: 07/11/1990

Verified By: Pamela Greenlaw Date: 7/26/1990

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

BN4 - In sample BDT39, all analytes were flagged J (estimated), as holding times were exceeded by less than 2 weeks. (Eight analytes were already black J'd.)

Pesticides/PCBs - In samples BDT38 and BDT39, all analytes were flagged estimated (J) (~J) as holding times were exceeded by less than 2 weeks.

[redacted]

DATA ASSESSMENT:

2. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip field, rinse and water blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross- contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for the common contaminants), the analytes are qualified as non- detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method blank contamination

VOA - The following analytes in the following samples were qualified U (not detected) because the analytes were present in the corresponding method blanks: acetone in SDT 27, 28, 33, 32, 34, 35, 36, 37, 38, 39, and 42; 2-butanone in SDT 34, 35, 36, 37, 38, 39, 40, 41, and 42; 4-methyl-2-pentanone in SDT 34; toluene in SDT 34, 35, 40, 41, and 42. - Toluene was qualified U in SDT 38 because it was present in the corresponding rinsate blank.

B) Field or rinse blank contamination ("water blanks" or "distilled water blanks" are validated like any other sample)

[redacted]

C) Trip blank contamination

DATA ASSESSMENT:

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl- phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable, "R".

DATA ASSESSMENT:

4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) RESPONSE FACTOR:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected ("R").

VOA - In samples BDT27, BDT28, BDT29, BDT30, and BDT33, 2-butanone was qualified (R) because the RRF was less than 0.05.

BNA - In samples BDT55, BDT56, and BDT57, 4-chloroaniline was qualified R because the RRF was less than 0.05.

- In samples BDT41 and BDT42, 4-chloroaniline was qualified R because the %D was greater than 90.

- In samples BDT36, BDT37, BDT38, BDT40, and BDT54, 3'3-dichlorobenzidine was qualified J (UJ) because the %D was greater than 50 and less than 90.

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD >50%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

VOA - Acetone was qualified estimated (J) in samples 3DT42 and 3DT50 because the % RSD was greater than 50 % but less than 90%.

- 1,1,1-trichloroethane and carbon tetrachloride were flagged J (UJ), in samples 3DT40, 3DT41 and 3DT42 because the % D was greater than 50 and less than 90

BNA - in sample 3DT51, 4-chloroaniline, 3,3-dichlorobenzidine, and 3-nitroaniline were qualified J, as the % RSD was greater than 50 and less than 90.

ATTACHMENT
SOP NO. HW-6

DATA ASSESSMENT:

6. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

VOA - all analytes in samples BDT53 and BDT54 were qualified estimated (J or UJ) because some surrogate recoveries were above contract-required QC limits.

BNA - all acids in samples BDT27, BDT29, BDT30, BDT31, and BDT35 were rejected (R) as acid surrogate recoveries were less than 10 percent.

Pesticides/PCBs - all analytes in sample BDT41 were flagged R, as the surrogate recovery was zero.

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

BNA – In sample SDT36, di-n-octyl phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene were flagged estimated (J or UJ) because the internal standard perylene-d_{12} was outside the upper limit. (Dibenz(a,h)anthracene was already flagged J-d).

– In sample SDT37, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene were flagged J or UJ for the same reason.

– In sample SDT38, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene were flagged J or UJ for the reason stated above.

DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued on next page if necessary):

12. CONTRACT PROBLEMS____NON-COMPLIANCE:

13. This package contains re-extraction, re-analysis or dilution. Upon reviewing the QA results, the following form I(s) are identified to be used.

DATA ASSESSMENT:

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued):

DPO: [ ] ACTION [ ] FYI

Report 2

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 13938

SDG NO. BDT27 and BDT36

SOW

NO. OF SAMPLES 18 WATER 9 SOIL ____ OTHER

LABORATORY Enviro-Tech

DATA USER FIT 2

REVIEW COMPLETION DATE July 11, 1990

REVIEWER [ ] ESD [ ] ESAT [ ] OTHER, CONTRACT/CONTRACTOR NUS - FIT 2

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	X	M	M	
2. GC-MS TUNE/ GC PERFORMANCE	O	O	O	
3. INITIAL CALIBRATIONS	O	O	O	
4. CONTINUING CALIBRATIONS	O	O	O	
5. FIELD BLANKS ('F' = not applicable)	F	F	F	
6. LABORATORY BLANKS	O	O	O	
7. SURROGATES	M	M	M	
8. MATRIX SPIKE/DUPLICATES	O	O	O	
9. REGIONAL QC ('F' = not applicable)	F	F	F	
10. INTERNAL STANDARDS	O	X	O	
11. COMPOUND IDENTIFICATION	O	O	O	
12. COMPOUND QUANTITATION	O	O	O	
13. SYSTEM PERFORMANCE	M	M	M	
14. OVERALL ASSESSMENT	M	M	M	

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 50% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

Type of Review: Total

Date: July 11, 1990

Case #: 13938

Project: Celotex

Lab Name: Enviro-Tech

Reviewer's Initials: sl

Number of Samples: 27

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	TICs Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	75/5						26	75/390
B/N (50)			5/5			2/2	26	7/1300
VOA (35)			5/5	36/15			27	41/945
PEST (20)	20/1						26	20/520
PCB (7)	7/1						26	7/182
TCDD (1)							0	0/0

Analytes Estimated Due to Exceeding Review Criteria for:

						INTERNAL STANDARDS		
Acids (15)		15/1					26	15/390
B/N (50)		42/1	8/6			15/3	26	65/1300
VOA (35)	70/2		8/5				27	78/945
PEST (20)		40/2					26	40/520
PCB (7)		14/2					26	14/182
TCDD (1)							0	0/0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT27

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT27V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT27V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	~~B~~ U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	~~U~~
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT27

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT27V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT27V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	25.10	10	J
2.	UNKNOWN	29.67	6	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT28

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT28V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT28V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	10	~~U~~ B
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	10	~~U~~ B
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT28

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT28V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT28V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 04/30/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	29.90	6	J

FORM I VOA-TIC

1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT29V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT29V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	4	J
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT29V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT29V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 04/30/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-20-3	DISSOPROPYL ETHER	18.17	20	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT30 G4

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT30V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT30V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT30

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT30V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT30V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 04/30/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.73	20	J
2.		UNKNOWN	30.17	5	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT32V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT32V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column (pack/cap) PACK Dilution Factor: 1.0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT31V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT31V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT31V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT31V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT32V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT32V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	11	~~B~~ U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT33V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT33V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 04/30/90

Column: (pack/cap) PACK

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	30	~~B~~ U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	~~2~~	~~BJ~~
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	2	J
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	2	J
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U
		5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT33V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT33V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 04/30/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	2-METHYL BUTANE	11.77	30	J
2.	96-37-7	METHYL CYCLOPENTANE	14.70	10	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT34 5.3

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT34V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT34V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	25	~~B~~
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	2	~~BJ~~
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	3	J
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	2	~~BJ~~
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	2	~~BJ~~
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	1	J
1330-20-7	Total Xylenes	5	U
		5	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT34

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT34V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT34V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 78-78-4	2-METHYL BUTANE	11.20	10	J
2. 96-37-7	METHYL CYCLOPENTANE	14.33	8	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT35 S.Y

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT35V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT35V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 05/01/90

Column: (pack/cap) PACK

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	10	~~B~~ J
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	1 ~~2~~	~~BJ~~
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	1	~~BJ~~
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U
		5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT35

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT35V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT35V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec.

Date Analyzed: 05/01/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT36V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT36V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 Date Analyzed: 05/05/90

Column: (pack/cap) PACK Dilution Factor: 1.0

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	18	U
67-64-1	Acetone	26	~~B~~
75-15-0	Carbon Disulfide	22	~~B~~ U
75-35-4	1,1-Dichloroethene	9	U
75-35-3	1,1-Dichloroethane	9	U
540-59-0	(Total)-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
71-55-6	1,1,1-Trichloroethane	14	~~B~~ J
56-23-5	Carbon Tetrachloride	3	J
108-05-4	Vinyl Acetate	9	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	9	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Total Xylenes	9	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT36V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT36V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 Date Analyzed: 05/05/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

000019

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT37 SE 22

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT37V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT37V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 Date Analyzed: 05/05/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	24	~~B~~ U
67-64-1	Acetone	10 ~~4~~	~~BJ~~ U
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-35-3	1,1-Dichloroethane	9	U
540-59-0	(Total)-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
71-55-6	1,1,1-Trichloroethane	5 ~~4~~	~~BJ~~ U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	9	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	9	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Total Xylenes	9	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT37

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT37V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT37V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 Date Analyzed: 05/05/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.20	100	J
2.	109-66-0	PENTANE	12.87	10	J
3.		UNKNOWN ALKENE	13.43	20	J
4.		UNKNOWN ALKANE	13.70	10	J
5.	96-37-7	METHYLCYCLOPENTANE	14.30	80	J
6.	79-29-8	2,3-DIMETHYL BUTANE	15.57	40	J
7.		UNKNOWN	16.40	70	J
8.		UNKNOWN	16.73	50	J
9.		UNKNOWN	19.00	30	J
10.		UNKNOWN	21.30	10	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT38V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT38V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 38 Date Analyzed: 05/05/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	44	
75-09-2	Methylene Chloride	44	~~B~~
67-64-1	Acetone	24	~~B~~
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-35-3	1,1-Dichloroethane	8	U
540-59-0	(Total)-1,2-Dichloroethene	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	10	~~JB~~
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	4	J
10061-01-5	cis-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	2	~~J~~
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Total Xylenes	8	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT38V

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: BDT38V

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. 38

Date Analyzed: 05/05/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 78-78-4	2-METHYL BUTANE	11.20	20	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT39V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT39V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 42 Date Analyzed: 05/05/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	17	U
67-64-1	Acetone	24	~~B~~
75-15-0	Carbon Disulfide	14	~~JB~~
75-35-4	1,1-Dichloroethene	9	U
75-35-3	1,1-Dichloroethane	9	U
540-59-0	(Total)-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
71-55-6	1,1,1-Trichloroethane	~~6~~	~~JB~~
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	9	U
75-27-4	Bromodichloromethane	17	U
78-87-5	1,2-Dichloropropane	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	9	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	7	J
1330-20-7	Total Xylenes	9	U
		25	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT39V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT39V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 42 Date Analyzed: 05/05/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.53	10	J
2.		UNKNOWN ALKANE	24.40	10	J
3.		UNKNOWN	25.00	10	J
4.		UNKNOWN	25.50	10	J
5.		UNKNOWN	30.83	10	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT47V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT47V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	16	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	8	BJ
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	1	BJ
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT47V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT47V

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. Date Analyzed: 05/01/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	25.00	8	J
2.	UNKNOWN	28.80	5	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT27

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT27BR

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT27BR

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.00	10	J
2.		UNKNOWN	12.47	10	J

June 08, 1990

Ms. Linda Boynton
U.S. EPA Contract Laboratory Program
Sample Management Office (SMO)
209 Madison Street
Suite 200
Alexandria, VA 22314

RE: Case 13938 Diskette and Data Package Deliverable

Dear Linda,

Please find the enclosed diskette and data package deliverable for Case 13938. Additional copies of the data package are being sent to EMSL-LV and Region II.

If you have any questions about this or any other matter, please feel free to contact me.

Very truly yours,

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION

C. Michael O'Quinn (crn)

C. Michael O'Quinn
Assistant Laboratory Manager

CMO/crn

Enclosure

cc: EMSL-LV
Region II

75100

NARRATIVE

Case 13938

A total of twenty-seven (27) samples were received by ENCOTEC on April 27 and 28, 1990 and were scheduled for Organics Analysis under Contract #68-D9-0033, first bid lot. Please refer to the following table for vital information that pertains to this case.

Table 1.0

SDG #: BDT36

SAMPLE ANALYZED

	Actual Samples	QC Samples	Re-Run Samples	Total Billable Analyses
Volatile Analyses	9	2	2	13
Semivolatile Analyses	9	4	3	16
Pesticide/PCB Analyses	9	4	0	13

Total Cumulate Billable Full Analyses: 13 + 3 Semivolatiles

This Deliverables Package is assembled in accordance with instructions in Section B, 2/88 revision of the Contract Laboratory Program - Statement of Work. A copy of this deliverable has been distributed to Region II, the Sample Management Office (SMO) and EMSL-LV. In addition a sample Summary Data Package and Diskette Deliverable has been sent to SMO.

The following is a detailed description of quality control sample, shipment and/or analytical problems that were encountered in the processing of these samples.

Sample Control/Sample Custody

Samples from this case were received by Federal Express courier on April 27 and 28, 1990. All samples were received in good condition. However, there were no sample tags present with this case. Also we were suppose to have four water samples for

sample BDT49 and four water samples for BDT50 but SMO - Region II incorrectly labeled two BDT50 bottles as BDT49. A phone call was made to Region II and they told us to change the bottles to the correct sample. Samples were scheduled for analysis.

Extraction/Sample Preparation

Soil samples BDT36-42, 53-54 were extracted for pesticide/pcb and semivolatile parameters on 04/30/90 and 05/05/90. All samples were then screened on GC (EC and FID detectors). Sample BDT38 was determined medium level for pesticide/pcb. Sample BDT39 was determined medium level for pesticide/pcb and semivolatiles. All other extracts were determined low level. Extracts were then processed according to CLP protocol. When loaded on the Gel Permeation Chromatograph, the instrument dump/collect valve ceased to function. The problem was immediately brought to ABC Laboratories attention and detective diodes and D/C valve were diagnosed as the cause of the malfunction. Because of repair delays from ABC Laboratories and the imposed deadline for case submittal, the GPC fraction of each extract was processed and completed without GPC cleanup. Detection levels for these extracts remain identical should they have been loaded on the GPC. All samples were then processed according to CLP protocol and given to the GC and GC/MS groups respectively on 05/11/90 and 05/08/90.

Two low level method blanks showed BNA compounds and were re-extracted on 06/01/90 along with Matrix spike and matrix spike duplicate to confirm the cleanliness of the method blanks. These extracts were given to GC/MS on 06/03/90.

Volatile Analyses

Nine soil samples were received on May 10, 1990 to be analyzed for volatile organics off the hazardous compound list (HSL). The analysis was done on May 15-16, 1990.

Method blank contamination was limited to Methylene chloride (CAS #75-09-2), 2-Butanone (CAS #78-93-3), Toluene (CAS #108-88-3) for blank 5/15, and Toluene for 5/16. All levels were below contract required quantitation levels (CRQL). Methylene chloride and 2-Butanone are common lab contaminants. Toluene has been traced to recent lab construction. Two tentatively identified compounds (TIC) were found in blank 5/15; none in 5/16. Please refer to the data package for further details.

The samples proved to be relatively clean. Sample BDT87V contained no compounds off the HSL list. Samples BDT88V, BDT89V, and BDT91V contained Methylene chloride below CRQL limits. Samples BDT94V and BDT95V contained Methylene chloride and Toluene below CRQL limits. Sample BDT90V contained Methylene chloride and Toluene below CRQL limits. One TIC was also found. Sample BDT92V contained Acetone (CAS #67-64-1) at one and a half times the detection limit in addition to 2-Butanone and Toluene below CRQL limits. BDT93V contained Acetone at three times detection limits as well as Toluene below CRQL. Please refer to data packages for exact concentrations.

Quality control was excellent for all samples. Surrogate recoveries were within contract limits, as were matrix spike and spike duplicate percent recoveries. Relative percent differences were also within advisory limits. EICPs were all within contract limits.

Semivolatile Analysis

The semivolatile fraction of Case #13938, SDG #BDT36 ran reasonably well. QA/QC for this case was good.

Method blank contamination consisted only of a few tentatively identified compounds (please see raw QC data package). Method blanks SBLK3 and SBLK4 had to be re-extracted since these blanks accidentally had spiking compounds added to them. Samples BDT36MSRE, BDT36MSDRE, BDT41MSRE and BDT41MSDRE also had to be

re-extracted (outside of hold times) since their corresponding blanks contained contamination above the threshold levels required by the contract.

Sample analysis showed several target and tentatively identified compounds for each sample (please see sample data package). Several samples had to be analyzed in duplicate to verify matrix interferences with internal standard areas.

QA/QC was generally good. Most surrogates, matrix spikes, EICPs, and retention times were within contract required limits. Those that were not could be accounted for by matrix interferences.

Pesticide/PCB Analysis

The pesticide portion of case 13938 was completed without difficulty. The QA/QC for the low level soil portion was good with 1 out of 15 surrogate recoveries outside QC limits. There were 2 sets of MS/MSD's run with the low level soil portion of this sample delivery group the first BDT36 had 0 out of 12 MS/MSD's outside QC limits, and 0 out of 6 RPD's outside limits. The second BDT41 had 4 out of 12 MS/MSD's outside QC limits and 0 out of 6 RPD's outside limits. This problem is under investigation. The QA/QC for the medium level soils was excellent with 0 out of 5 surrogate recoveries outside QC limits, 0 out of 12 MS/MSD's outside limits, and 0 out of 6 RPD's outside limits. All blanks were determined to be free of HSL pesticides/PCBs above CRQL.

A special note should be mentioned concerning form 8E. The ZZZZZ's for both forms indicate samples run as part of a 2nd sample delivery group. Also the variation of the time analyzed between 1820-0704 and 0925-1126 on forms for sequence analyzed 5-26-90 was due to a power failure that occurred during the run. The asteric on the 5-26-90 form indicates a sample to which no surrogate was added, this is under investigation.

The following special flags are used by ENCOTEC in the pesticide/PCB analysis.

X-flag : The X flag denotes manually entered data. This always occurs on multi-component quantitations and sometimes occurs on individual pesticides when the analyst had to correct the integration of a peak.

Z-flag : The Z flag indicates a poor agreement between values obtained on a quantitation using both columns. When the quantitation on both columns gives a ratio from 0.7 to 1.4, a confirmation is assumed. If the ratio ranges above 1.4 but below 1.7 or below 0.7 but above 0.5, then there is some degree of uncertainty as to the validity of the confirmation. A Z flag is then added to indicate the suspect data. Ratios above 1.7 or below 0.5 are considered false postivies and are not reported. GC/MS confirmation is performed on all quantitations if the concentration is great enough. If GC/MS confirms a compound, it is reported without regard to the ratio.

J-flag : The J flag is used to indicate the presence of HSL pesticides and/or PCBs below the CRDL. In order to use this flag, the ratio MUST be between 0.7 and 1.4 A J flag is not given to any compound quantitatied lower than five times below the CRQL.

Y-flag : The Y flag is used to indicate that quantitation was performed on the secondary dilution of a sample.

Sample Summary

The following samples within SDG BDT36 were determined to be free of all HSL pesticides/PCBs above CRQLs; BDT36, BDT37, BDT38, BDT39, BDT40, BDT41, BDT53, and BDT54.

A special note should be mentioned concerning sample BDT41, it was suspected to contain PCB's, (primarily 1260) but positive identification could not be acheived due to the high level of hydrocarbons, which responded on the ECD, as confirmed by GC/MS.

Also there were problems encountered with samples BDT36, BDT40, BDT53, and BDT54. Analysis could only be acheived by running the samples at these minimum dilution values. This interference did not respond on the ECD detector.

Sample BDT42 was found to contain 4,4'-DDT(CAS#50-29-3) levels less than CRQ but at levels less than CRQL's it was therefore flagged with a J.

Any technical questions regarding the data present in this deliverable should be addressed to the individual whose name appears at the end of this case narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions implied or detailed above. Release of the information contained in this hardcopy data package and in the computer - readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

C. Michael O'Quinn (crn) 6/8/90

C. Michael O'Quinn
Assistant Laboratory Manager
CLP Project Manager
CMO/crn
75100

INORGANICS

A.2.1 (continuation)

(2) The CRI for Beryllium, Copper & Zinc is between 50-79%. Therefore the analytes that fell w/i the affected range were flagged estimate "J".

Be MBCQ39 & 40 84-90

9/5/90 Zn: no samples in affected range

Cu: MBCQ89 & 90

(3) The initial CRI for Chromium & the CRI for Lead & Selenium was between 121-150%. Therefore the positive analytes that fell w/i the affected range were flagged estimated "J".

Cr + Pb: no samples in affected range

(Note Se would be flagged estimated "J" in MBCQ39 but was previously flagged (as per Stmt. #1)

(4) The soil spike sample recovery for Antimony & Chromium is between 10-74%. Therefore these analytes were flagged estimated "J" in MBCQ 39, 40, 84-90

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ89

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-08S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 97.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3760.00			P
7440-36-0	Antimony	2.40	U	N J	P
7440-38-2	Arsenic	2.40			F
7440-39-3	Barium	61.20			P
7440-41-7	Beryllium	0.47	B	J	P
7440-41-7	Cadmium	0.20	U		P
7440-70-2	Calcium	963.00	B	*	P
7440-47-3	Chromium	12.40		N J	P
7440-48-4	Cobalt	5.60	B		P
7440-50-8	Copper	17.20		J*	P
7439-89-6	Iron	12800.00			P
7439-92-1	Lead	12.20		* J	F
7439-95-4	Magnesium	2400.00			P
7439-96-5	Manganese	271.00			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	12.50			P
7440-09-7	Potassium	905.00	B		P
7782-49-2	Selenium	0.38	U	J	F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	73.30	B		P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	15.10			P
7440-66-6	Zinc	43.90			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES & ROOTS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBCQ90

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: 13938 SAS No.: SDG No.: MBCQ84

Matrix (soil/water): SOIL Lab Sample ID: 04257-09S

Level (low/med): LOW Date Received: 04/28/90

% Solids: 91.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5660.00			P
7440-36-0	Antimony	2.40	U	N J	P
7440-38-2	Arsenic	3.10			F
7440-39-3	Barium	66.00			P
7440-41-7	Beryllium	0.47	B	J	P
7440-41-7	Cadmium	0.20	U		P
7440-70-2	Calcium	1160.00		*	P
7440-47-3	Chromium	14.50		N J	P
7440-48-4	Cobalt	8.80	B		P
7440-50-8	Copper	19.90		J*	P
7439-89-6	Iron	16600.00			P
7439-92-1	Lead	53.70		*	F
7439-95-4	Magnesium	2810.00			P
7439-96-5	Manganese	367.00			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	17.40			P
7440-09-7	Potassium	1060.00			P
7782-49-2	Selenium	0.41	U		F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	77.10	B		P
7440-28-0	Thallium	0.20	U		F
7440-62-2	Vanadium	21.30			P
7440-66-6	Zinc	69.60			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES & ROOTS

000010

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT28RE

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT28BRE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT28BRE

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/30/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	3	J
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	5	J
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	2	J
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT28RE

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT28BRE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT28BRE

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/24/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/30/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.25	8	J/X

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT29BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT29BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT29BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT29BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT29BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT29BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.97	5	J
2.		UNKNOWN	10.92	10	J
3.		UNKNOWN	11.38	4	J
4.		UNKNOWN	12.47	20	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT30

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT30BR

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT30BR

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT30

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT30BR

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT30BR

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	10	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	50	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	50	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)Anthracene	20	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT30

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT30BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT30BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 9

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.98	8	J
2.		UNKNOWN	6.75	4	J
3.		UNKNOWN	12.45	5	J
4.		UNKNOWN PHTHALATE	33.82	8	J
5.		UNKNOWN PHTHALATE	34.12	20	J
6.		UNKNOWN PHTHALATE	34.42	20	J
7.		UNKNOWN PHTHALATE	34.63	30	J
8.		UNKNOWN PHTHALATE	34.80	20	J
9.		UNKNOWN PHTHALATE	34.82	10	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT31BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT31BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	~~U~~
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	~~U~~
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	~~U~~
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	~~U~~
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	~~U~~
65-85-0	Benzoic Acid	50	~~U~~
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	~~U~~
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	~~U~~
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	~~U~~
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	~~U~~
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT31BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT31BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT31BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT31BR

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.98	10	J
2.		UNKNOWN	12.27	4	J
3.	10544-50-0	SULFUR	25.62	7	J
4.		UNKNOWN	26.17	5	J

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT32B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT32B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT32B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT32B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT32B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT32B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT33B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT33B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT33B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT33B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	1	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	J
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT33B

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT33B

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

Number TICs found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.22	7	J
2.		UNKNOWN	10.70	7	J
3.		UNKNOWN ALKANE	19.88	4	J
4.		UNKNOWN ALKANE	20.72	8	J
5.		UNKNOWN ALKANE	22.22	5	J
6.	58-08-2	CAFFEINE	22.50	10	J
7.		UNKNOWN SILOXANE	24.33	30	J
8.		UNKNOWN	26.48	50	J
9.		UNKNOWN	26.58	60	J
10.		UNKNOWN	33.78	9	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT34

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT34B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT34B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT34

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT34B

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT34B

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT34

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT34B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT34B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. ____ dec. ____ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: 1.0

Number TICs found: 9

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	58-08-2	CAFFEINE	22.55	10	J
2.		UNKNOWN	26.40	8	J
3.		UNKNOWN	26.48	10	J
4.		UNKNOWN PHTHALATE	32.95	4	J
5.		UNKNOWN PHTHALATE	33.25	7	J
6.		UNKNOWN PHTHALATE	33.48	8	J
7.		UNKNOWN PHTHALATE	33.55	10	J
8.		UNKNOWN PHTHALATE	33.77	10	J
9.		UNKNOWN PHTHALATE	33.85	8	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT35

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT35B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT35B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT35

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT35B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT35B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT35

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT35P

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT35B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.25	7	J
2.		UNKNOWN	10.23	5	J
3.		UNKNOWN	10.27	4	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT36BR1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT36BR1

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. 44 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH:

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)Ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl Alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
39638-32-9	bis(2-Chloroisopropyl)Ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	N-Nitroso-Di-n-Propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
65-85-0	Benzoic Acid	1200	U
111-91-1	bis(2-Chloroethoxy)Methane	5700	U
120-83-2	2,4-Dichlorophenol	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	350	J
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-Methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	180	J
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	5700	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethyl Phthalate	5700	U
208-96-8	Acenaphthylene	1200	U
		430	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT36BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT36BR1

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5700	U
83-32-9	Acenaphthene	320	J
51-28-5	2,4-Dinitrophenol	5700	U
100-02-7	4-Nitrophenol	5700	U
132-64-9	Dibenzofuran	260	J
121-14-2	2,4-Dinitrotoluene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
86-73-7	Fluorene	550	J
100-10-6	4-Nitroaniline	5700	U
534-52-1	4,6-Dinitro-2-Methylphenol	5700	U
86-30-6	N-Nitrosodiphenylamine (1)	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	5700	U
85-01-8	Phenanthrene	3300	
120-12-7	Anthracene	1200	
84-74-2	Di-n-Butylphthalate	470	J
206-44-0	Fluoranthene	7200	
129-00-0	Pyrene	3300	
85-68-7	Butylbenzylphthalate	1200	U
91-94-1	3,3'-Dichlorobenzidine	2400	U
56-55-3	Benzo(a)Anthracene	3400	
117-81-7	bis(2-Ethylhexyl)Phthalate	1200	U
218-01-9	Chrysene	4300	
117-84-0	Di-n-Octyl Phthalate	1200	U
205-99-2	Benzo(b)Fluoranthene	5400	
207-08-9	Benzo(k)Fluoranthene	1200	U
50-32-8	Benzo(a)Pyrene	2900	
193-39-5	Indeno(1,2,3-cd)Pyrene	1500	
53-70-3	Dibenz(a,h)Anthracene	680	J
191-24-2	Benzo(g,h,i)Perylene	1200	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT36BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT36BR1

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: Dilution Factor: 1.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.28	4000	J
2.		UNKNOWN	7.72	5000	J
3.		UNKNOWN ALKANE	12.63	1000	J
4.		UNKNOWN ALKANE	12.92	1000	J
5.		UNKNOWN ALKANE	14.08	1000	J
6.		UNKNOWN ALKANE	14.60	2000	J
7.		UNKNOWN ALKANE	16.00	2000	J
8.		UNKNOWN ALKANE	16.42	2000	J
9.		UNKNOWN ALKANE	17.48	2000	J
10.		UNKNOWN ALKANE	18.12	2000	J
11.		UNKNOWN ALKANE	19.72	2000	J
12.		UNKNOWN ALKANE	20.45	2000	J
13.		UNKNOWN ALKANE	21.32	3000	J
14.		UNKNOWN SILOXANE	25.02	4000	J
15.	10544-50-0	SULFUR	25.58	2000	J
16.		UNKNOWN	25.68	3000	J
17.		UNKNOWN SILOXANE	27.55	4000	J
18.		UNKNOWN ORGANIC ACID	30.23	10000	J
19.		UNKNOWN	36.72	4000	J
20.		UNKNOWN	37.50	4000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT37

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT37BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT37BR1

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)Ether	1200	U
95-57-8	2-Chlorophenol	1200	U
541-73-1	1,3-Dichlorobenzene	1200	U
106-46-7	1,4-Dichlorobenzene	1200	U
100-51-6	Benzyl Alcohol	1200	U
95-50-1	1,2-Dichlorobenzene	1200	U
95-48-7	2-Methylphenol	1200	U
39638-32-9	bis(2-Chloroisopropyl)Ether	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	N-Nitroso-Di-n-Propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
65-85-0	Benzoic Acid	5700	U
111-91-1	bis(2-Chloroethoxy)Methane	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
120-82-1	1,2,4-Trichlorobenzene	1200	U
91-20-3	Naphthalene	550	J
106-47-8	4-Chloroaniline	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-Methylphenol	1200	U
91-57-6	2-Methylnaphthalene	130	J
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	5700	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	5700	U
131-11-3	Dimethyl Phthalate	1200	U
208-96-8	Acenaphthylene	170	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT37

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT37BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT37BR1

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5700	U
83-32-9	Acenaphthene	120	J
51-28-5	2,4-Dinitrophenol	5700	U
100-02-7	4-Nitrophenol	5700	U
132-64-9	Dibenzofuran	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
84-66-2	Diethylphthalate	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
86-73-7	Fluorene	200	J
100-10-6	4-Nitroaniline	5700	U
534-52-1	4,6-Dinitro-2-Methylphenol	5700	U
86-30-6	N-Nitrosodiphenylamine (1)	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	5700	U
85-01-8	Phenanthrene	1900	
120-12-7	Anthracene	430	J
84-74-2	Di-n-Butylphthalate	1200	U
206-44-0	Fluoranthene	3700	
129-00-0	Pyrene	2200	
85-68-7	Butylbenzylphthalate	2100	
91-94-1	3,3'-Dichlorobenzidine	2400	UJ
56-55-3	Benzo(a)Anthracene	1800	
117-81-7	bis(2-Ethylhexyl)Phthalate	7300	
218-01-9	Chrysene	2200	
117-84-0	Di-n-Octyl Phthalate	580	J
205-99-2	Benzo(b)Fluoranthene	2600	J
207-08-9	Benzo(k)Fluoranthene	1200	U
50-32-8	Benzo(a)Pyrene	1200	
193-39-5	Indeno(1,2,3-cd)Pyrene	1100	J
53-70-3	Dibenz(a,h)Anthracene	1200	U
191-24-2	Benzo(g,h,i)Perylene	710	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT37

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT37BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT37BR1

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. _____ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.55	700	J
2.		UNKNOWN	6.25	4000	J
3.		UNKNOWN	6.56	1000	J
4.		UNKNOWN	7.03	1000	J
5.		UNKNOWN ALKYL BENZENE	7.73	4000	J
6.		UNKNOWN ALKYL BENZENE	8.23	900	J
7.		UNKNOWN ALKYL BENZENE	8.55	2000	J
8.		UNKNOWN ALKYL BENZENE	9.03	1000	J
9.		UNKNOWN ALKYL BENZENE	9.45	700	J
10.		UNKNOWN ALKYL BENZENE	10.63	1000	J
11.		UNKNOWN ALKYL BENZENE	10.73	700	J
12.		UNKNOWN	11.12	900	J
13.		UNKNOWN ALKYL BENZENE	11.37	1000	J
14.		UNKNOWN SILOXANE	25.02	3000	J
15.	10544-50-0	SULFUR	25.70	4000	J
16.		UNKNOWN	23.90	8000	J
17.		UNKNOWN ALKANE	35.37	5000	J
18.		UNKNOWN	36.78	6000	J
19.		UNKNOWN	37.55	5000	J
20.		UNKNOWN	39.22	4000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT38BR1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT38BR1

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. 38 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.6

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)Ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl Alcohol	140	J
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	150	J
39638-32-9	bis(2-Chloroisopropyl)Ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-Di-n-Propylamine	210	J
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	1100	U
111-91-1	bis(2-Chloroethoxy)Methane	5200	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	320	J
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-Methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	290	J
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	5200	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethyl Phthalate	5200	U
208-96-8	Acenaphthylene	1100	U
		1600	

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT38BR1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT38BR1

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. 38 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.6

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5200	U
83-32-9	Acenaphthene	780	J
51-28-5	2,4-Dinitrophenol	5200	U
100-02-7	4-Nitrophenol	5200	U
132-64-9	Dibenzofuran	430	J
121-14-2	2,4-Dinitrotoluene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	990	J
100-10-6	4-Nitroaniline	5200	U
534-52-1	4,6-Dinitro-2-Methylphenol	5200	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5200	U
85-01-8	Phenanthrene	5100	
120-12-7	Anthracene	1500	
84-74-2	Di-n-Butylphthalate	1100	U
206-44-0	Fluoranthene	10000	
129-00-0	Pyrene	5500	
85-68-7	Butylbenzylphthalate	3500	
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)Anthracene	14000	
117-81-7	bis(2-Ethylhexyl)Phthalate	10000	
218-01-9	Chrysene	5200	
117-84-0	Di-n-Octyl Phthalate	110	J
205-99-2	Benzo(b)Fluoranthene	7200	
207-08-9	Benzo(k)Fluoranthene	8200	
50-32-8	Benzo(a)Pyrene	4200	
193-39-5	Indeno(1,2,3-cd)Pyrene	2600	
53-70-3	Dibenz(a,h)Anthracene	420	J
191-24-2	Benzo(g,h,i)Perylene	2200	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT38BR1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT38BR1

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. 38 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y

pH: 7.6

Dilution Factor: 1.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.58	1000	JN
2.		UNKNOWN	6.30	3000	J
3.		UNKNOWN	6.60	2000	J
4.		UNKNOWN	7.77	4000	J
5.		UNKNOWN	9.17	4000	J
6.		UNKNOWN	16.75	600	J
7.		UNKNOWN	17.38	3000	J
8.		UNKNOWN ALKANE	17.50	1000	J
9.		UNKNOWN	17.75	2000	J
10.	10544-50-0	SULFUR	25.82	1000	J
11.		UNKNOWN	30.37	7000	J
12.		UNKNOWN PHTHALATE	31.97	7000	J
13.		UNKNOWN	33.63	9000	J
14.		UNKNOWN	35.28	2000	J
15.		UNKNOWN	36.93	3000	J
16.		UNKNOWN	37.12	10000	J
17.		UNKNOWN	37.72	8000	J
18.		UNKNOWN	38.58	10000	J
19.		UNKNOWN PNA	38.68	7000	J
20.		UNKNOWN	39.33	5000	J

FORM I SV-TIC

1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT39B

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: BDT39B

Level: (low/med) MED

Date Received: 04/27/90

% Moisture: not dec. 42 dec.

Date Extracted: 05/05/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) N pH: 7.8

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	34000	U
111-44-4	bis(2-Chloroethyl)Ether	34000	U
95-57-8	2-Chlorophenol	34000	U
541-73-1	1,3-Dichlorobenzene	34000	U
106-46-7	1,4-Dichlorobenzene	34000	U
100-51-6	Benzyl Alcohol	34000	U
95-50-1	1,2-Dichlorobenzene	34000	U
95-48-7	2-Methylphenol	34000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	34000	U
106-44-5	4-Methylphenol	34000	U
621-64-7	N-Nitroso-Di-n-Propylamine	34000	U
67-72-1	Hexachloroethane	34000	U
98-95-3	Nitrobenzene	34000	U
78-59-1	Isophorone	34000	U
88-75-5	2-Nitrophenol	34000	U
105-67-9	2,4-Dimethylphenol	34000	U
65-85-0	Benzoic Acid	34000	U
111-91-1	bis(2-Chloroethoxy)Methane	170000	U
120-83-2	2,4-Dichlorophenol	34000	U
120-82-1	1,2,4-Trichlorobenzene	34000	U
91-20-3	Naphthalene	34000	U
106-47-8	4-Chloroaniline	34000	U
87-68-3	Hexachlorobutadiene	34000	U
59-50-7	4-Chloro-3-Methylphenol	34000	U
91-57-6	2-Methylnaphthalene	34000	U
77-47-4	Hexachlorocyclopentadiene	34000	U
88-06-2	2,4,6-Trichlorophenol	34000	U
95-95-4	2,4,5-Trichlorophenol	34000	U
91-58-7	2-Chloronaphthalene	170000	U
88-74-4	2-Nitroaniline	34000	U
131-11-3	Dimethyl Phthalate	170000	U
208-96-8	Acenaphthylene	34000	U
		34000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT39B

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: BDT39B

Level: (low/med) MED

Date Received: 04/27/90

% Moisture: not dec. 42 dec.

Date Extracted: 05/05/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) N pH: 7.8

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	170000	U
83-32-9	Acenaphthene	5900	J
51-28-5	2,4-Dinitrophenol	170000	U
100-02-7	4-Nitrophenol	170000	U
132-64-9	Dibenzofuran	5100	J
121-14-2	2,4-Dinitrotoluene	34000	U
606-20-2	2,6-Dinitrotoluene	34000	U
84-66-2	Diethylphthalate	34000	U
7005-72-3	4-Chlorophenyl-phenylether	34000	U
86-73-7	Fluorene	7300	J
100-10-6	4-Nitroaniline	170000	U
534-52-1	4,6-Dinitro-2-Methylphenol	170000	U
86-30-6	N-Nitrosodiphenylamine (1)	34000	U
101-55-3	4-Bromophenyl-phenylether	34000	U
118-74-1	Hexachlorobenzene	34000	U
87-86-5	Pentachlorophenol	170000	U
85-01-8	Phenanthrene	77000	
120-12-7	Anthracene	27000	J
84-74-2	Di-n-Butylphthalate	5100	J
206-44-0	Fluoranthene	120000	
129-00-0	Pyrene	74000	
85-68-7	Butylbenzylphthalate	34000	U
91-94-1	3,3'-Dichlorobenzidine	68000	U
56-55-3	Benzo(a)Anthracene	46000	
117-81-7	bis(2-Ethylhexyl)Phthalate	34000	U
218-01-9	Chrysene	49000	
117-84-0	Di-n-Octyl Phthalate	34000	U
205-99-2	Benzo(b)Fluoranthene	25000	J
207-08-9	Benzo(k)Fluoranthene	39000	
50-32-8	Benzo(a)Pyrene	36000	
193-39-5	Indeno(1,2,3-cd)Pyrene	20000	J
53-70-3	Dibenz(a,h)Anthracene	34000	U
191-24-2	Benzo(g,h,i)Perylene	19000	J

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT39B

Sample wt/vol: 1.0 (g/mL) G

Lab File ID: BDT39B

Level: (low/med) MED

Date Received: 04/27/90

% Moisture: not dec. 42 dec.

Date Extracted: 05/05/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) N pH: 7.8

Dilution Factor: 1.0

Number TICs found: 9

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	28.05	90000	J
2.		UNKNOWN ALKANE	30.33	100000	J
3.		UNKNOWN ALKANE	31.42	100000	J
4.		UNKNOWN ALKANE	32.45	200000	J
5.		UNKNOWN ALKANE	33.45	200000	J
6.		UNKNOWN ALKANE	34.42	200000	J
7.		UNKNOWN ALKANE	35.35	200000	J
8.		UNKNOWN ALKANE	36.27	100000	J
9.		UNKNOWN ALKANE	37.12	100000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT47B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT47B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT47B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT47B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT47B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT47B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT48

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT48B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT48B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT48

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT48B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT48B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT48

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT48B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT48B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT49

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT49B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT49B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT49

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT49B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT49B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT49

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT49B

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT49B

Level: (low/med) LOW

Date Received: 04/27/90

% Moisture: not dec. dec.

Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT50

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT50B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT50B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT50

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT50B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT50B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT50

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT50B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT50B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC

1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT51

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT51B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT51B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/30/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT51

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT51B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT51B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/30/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT51

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT51B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT51B

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/30/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT27

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51590

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/26/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT28

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51591

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT29

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51592

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT30

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51593

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. ___ dec. ___ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT31

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51594

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT32

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51595

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. ___ dec. ___ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT33

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51596

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT34

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51597

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	0.050 U
319-85-7	beta-BHC	0.050 U
319-86-8	delta-BHC	0.050 U
58-89-9	Lindane	0.050 U
76-44-8	Heptachlor	0.050 U
309-00-2	Aldrin	0.050 U
1024-57-3	Heptachlor epoxide	0.050 U
959-98-8	Endosulfan I	0.050 U
60-57-1	Dieldrin	0.050 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
1031-07-8	Endosulfan sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
72-43-5	Methoxychlor	0.10 U
53494-70-5	Endrin ketone	0.50 U
5103-71-9	alpha-Chlordane	0.10 U
5103-74-2	gamma-Chlordane	0.50 U
8001-35-2	Toxaphene	0.50 U
12674-11-2	Aroclor-1016	1.0 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	0.50 U
11096-82-5	Aroclor-1260	1.0 U
		1.0 U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT35

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51598

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT36

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 516054

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	57	U
319-85-7	beta-BHC	57	U
319-86-8	delta-BHC	57	U
58-89-9	Lindane	57	U
76-44-8	Heptachlor	57	U
309-00-2	Aldrin	57	U
1024-57-3	Heptachlor epoxide	57	U
959-98-8	Endosulfan I	57	U
60-57-1	Dieldrin	57	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin ketone	570	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	570	U
8001-35-2	Toxaphene	570	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	570	U
11141-16-5	Aroclor-1232	570	U
53469-21-9	Aroclor-1242	570	U
12672-29-6	Aroclor-1248	570	U
11097-69-1	Aroclor-1254	570	U
11096-82-5	Aroclor-1260	1100	U
		1100	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT37

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 51606

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. 44 dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/29/90

GPC Cleanup: (Y/N) N pH: 7.4 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	14	U
319-85-7	beta-BHC	14	U
319-86-8	delta-BHC	14	U
58-89-9	Lindane	14	U
76-44-8	Heptachlor	14	U
309-00-2	Aldrin	14	U
1024-57-3	Heptachlor epoxide	14	U
959-98-8	Endosulfan I	14	U
60-57-1	Dieldrin	14	U
72-55-9	4,4'-DDE	29	U
72-20-8	Endrin	29	U
33213-65-9	Endosulfan II	29	U
72-54-8	4,4'-DDD	29	U
1031-07-8	Endosulfan sulfate	29	U
50-29-3	4,4'-DDT	29	U
72-43-5	Methoxychlor	29	U
53494-70-5	Endrin ketone	140	U
5103-71-9	alpha-Chlordane	29	U
5103-74-2	gamma-Chlordane	140	U
8001-35-2	Toxaphene	140	U
12674-11-2	Aroclor-1016	290	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	140	U
53469-21-9	Aroclor-1242	140	U
12672-29-6	Aroclor-1248	140	U
11097-69-1	Aroclor-1254	140	U
11096-82-5	Aroclor-1260	290	U
		290	U

001793

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT38

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 51607

Sample wt/vol: 1.0 (g/mL) G Lab File ID: _____

Level: (low/med) MED Date Received: 04/27/90

% Moisture: not dec. 38 dec. __ Date Extracted: 05/05/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/29/90

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	190	UJ
319-85-7	beta-BHC	190	U
319-86-8	delta-BHC	190	U
58-89-9	Lindane	190	U
76-44-8	Heptachlor	190	U
309-00-2	Aldrin	190	U
1024-57-3	Heptachlor epoxide	190	U
959-98-8	Endosulfan I	190	U
60-57-1	Dieldrin	190	U
72-55-9	4,4'-DDE	390	U
72-20-8	Endrin	390	U
33213-65-9	Endosulfan II	390	U
72-54-8	4,4'-DDD	390	U
1031-07-8	Endosulfan sulfate	390	U
50-29-3	4,4'-DDT	390	U
72-43-5	Methoxychlor	390	U
53494-70-5	Endrin ketone	1900	U
5103-71-9	alpha-Chlordane	390	U
5103-74-2	gamma-Chlordane	1900	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	3900	U
11104-28-2	Aroclor-1221	1900	U
11141-16-5	Aroclor-1232	1900	U
53469-21-9	Aroclor-1242	1900	U
12672-29-6	Aroclor-1248	1900	U
11097-69-1	Aroclor-1254	1900	U
11096-82-5	Aroclor-1260	3900	U

001801

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT39

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 51608

Sample wt/vol: 1.0 (g/mL) G Lab File ID: _____

Level: (low/med) MED Date Received: 04/27/90

% Moisture: not dec. 42 dec. __ Date Extracted: 05/05/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/29/90

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	210	U
319-85-7	beta-BHC	210	U
319-86-8	delta-BHC	210	U
58-89-9	Lindane	210	U
76-44-8	Heptachlor	210	U
309-00-2	Aldrin	210	U
1024-57-3	Heptachlor epoxide	210	U
959-98-8	Endosulfan I	210	U
60-57-1	Dieldrin	210	U
72-55-9	4,4'-DDE	410	U
72-20-8	Endrin	410	U
33213-65-9	Endosulfan II	410	U
72-54-8	4,4'-DDD	410	U
1031-07-8	Endosulfan sulfate	410	U
50-29-3	4,4'-DDT	410	U
72-43-5	Methoxychlor	410	U
53494-70-5	Endrin ketone	2100	U
5103-71-9	alpha-Chlordane	410	U
5103-74-2	gamma-Chlordane	2100	U
8001-35-2	Toxaphene	2100	U
12674-11-2	Aroclor-1016	4100	U
11104-28-2	Aroclor-1221	2100	U
11141-16-5	Aroclor-1232	2100	U
53469-21-9	Aroclor-1242	2100	U
12672-29-6	Aroclor-1248	2100	U
11097-69-1	Aroclor-1254	2100	U
11096-82-5	Aroclor-1260	4100	U
		4100	U

001806

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT47

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51599

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT48

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51600

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT49

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51601

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. ___ dec. ___ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	0.050 U
319-85-7	beta-BHC	0.050 U
319-86-8	delta-BHC	0.050 U
58-89-9	Lindane	0.050 U
76-44-8	Heptachlor	0.050 U
309-00-2	Aldrin	0.050 U
1024-57-3	Heptachlor epoxide	0.050 U
959-98-8	Endosulfan I	0.050 U
60-57-1	Dieldrin	0.050 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
1031-07-8	Endosulfan sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
72-43-5	Methoxychlor	0.10 U
53494-70-5	Endrin ketone	0.50 U
5103-71-9	alpha-Chlordane	0.10 U
5103-74-2	gamma-Chlordane	0.50 U
8001-35-2	Toxaphene	0.50 U
12674-11-2	Aroclor-1016	1.0 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	0.50 U
11096-82-5	Aroclor-1260	1.0 U
		1.0 U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT50

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51602

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

Level: (low/med) LOW Date Received: 04/27/90

% Moisture: not dec. __ dec. __ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT53

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT53V

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: BDT53V

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 45

Date Analyzed: 05/05/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109-66-0	PENTANE	12.87	20	J
2.		UNKNOWN	14.33	10	J
3.		UNKNOWN ALKANE	25.53	90	J
4.		UNKNOWN	25.77	100	J
5.		UNKNOWN	26.87	70	J
6.		UNKNOWN	28.57	50	J
7.		UNKNOWN	29.43	100	J
8.		UNKNOWN	30.23	30	J
9.		UNKNOWN ALKANE	31.10	100	J
10.		UNKNOWN	32.87	40	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT54 5000

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT54V

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: BDT54V

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 42

Date Analyzed: 05/06/90

Column: (pack/cap) PACK

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U J
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	17	U
67-64-1	Acetone	11	~~B~~ U
75-15-0	Carbon Disulfide	340	~~B~~
75-35-4	1,1-Dichloroethene	9	U
75-35-3	1,1-Dichloroethane	9	U
540-59-0	(Total)-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
71-55-6	1,1,1-Trichloroethane	62	~~B~~
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	9	U
75-27-4	Bromodichloromethane	17	U
78-87-5	1,2-Dichloropropane	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-01-5	cis-1,3-Dichloropropene	2	J
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	9	U
591-78-6	2-Hexanone	7	J
127-18-4	Tetrachloroethene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	43	~~B~~
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	12	J
1330-20-7	Total Xylenes	9	U
		44	J ✓

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT54

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT54V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT54V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 42 Date Analyzed: 05/06/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	7094-26-0	1,1,2-TRIMETHYL CYCLOHEXANO	25.63	80	J
2.		UNKNOWN	25.83	80	J
3.		UNKNOWN	26.93	60	J
4.		UNKNOWN	28.77	40	J
5.		UNKNOWN	29.53	100	J
6.		UNKNOWN	30.33	30	J
7.		UNKNOWN	31.23	100	J
8.		UNKNOWN	33.10	40	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT40 S/

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT40VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT40VR

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 7 Date Analyzed: 05/06/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	5 ~~4~~	~~BJ~~ J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	12	~~B~~ U
56-23-5	Carbon Tetrachloride	5	U J
108-05-4	Vinyl Acetate	5	U J
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5 ~~3~~	~~BJ~~ J
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U
		5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT40

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT40VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT40VR

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 7 Date Analyzed: 05/06/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT41VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT41VR

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 Date Analyzed: 05/06/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	~~5~~	~~BJ~~
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	~~7~~	~~BJ~~
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	~~2~~ 5	~~BJ~~ U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT41VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT41VR

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 Date Analyzed: 05/06/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT42VR

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: BDT42VR

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 9

Date Analyzed: 05/06/90

Column: (pack/cap) PACK

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	5	~~BJ~~ U
75-15-0	Carbon Disulfide	15	~~B~~ U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	8	~~JB~~
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	2	~~JB~~
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U
		5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT42VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: BDT42VR

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 9 Date Analyzed: 05/06/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT55V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT55V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. Date Analyzed: 05/02/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.:

SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT55V

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: BDT55V

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec.

Date Analyzed: 05/02/90

Column (pack/cap) PACK

Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT56V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT56V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. Date Analyzed: 05/02/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	6	BJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT56V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT56V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. Date Analyzed: 05/02/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT57 2NE

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT57V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT57V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. Date Analyzed: 05/02/90

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	(Total)-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT57

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT57V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: BDT57V

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. Date Analyzed: 05/02/90

Column (pack/cap) PACK Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT53

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT53B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT53B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 45 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	12000	U
111-44-4	bis(2-Chloroethyl)Ether	12000	U
95-57-8	2-Chlorophenol	12000	U
541-73-1	1,3-Dichlorobenzene	12000	U
106-46-7	1,4-Dichlorobenzene	12000	U
100-51-6	Benzyl Alcohol	12000	U
95-50-1	1,2-Dichlorobenzene	12000	U
95-48-7	2-Methylphenol	12000	U
39638-32-9	bis(2-Chloroisopropyl)Ether	12000	U
106-44-5	4-Methylphenol	12000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1900	J
67-72-1	Hexachloroethane	12000	U
98-95-3	Nitrobenzene	12000	U
78-59-1	Isophorone	12000	U
88-75-5	2-Nitrophenol	12000	U
105-67-9	2,4-Dimethylphenol	12000	U
65-85-0	Benzoic Acid	12000	U
111-91-1	bis(2-Chloroethoxy)Methane	58000	U
120-83-2	2,4-Dichlorophenol	12000	U
120-82-1	1,2,4-Trichlorobenzene	12000	U
91-20-3	Naphthalene	12000	U
106-47-8	4-Chloroaniline	2500	J
87-68-3	Hexachlorobutadiene	12000	U
59-50-7	4-Chloro-3-Methylphenol	12000	U
91-57-6	2-Methylnaphthalene	12000	U
77-47-4	Hexachlorocyclopentadiene	12000	U
88-06-2	2,4,6-Trichlorophenol	12000	U
95-95-4	2,4,5-Trichlorophenol	12000	U
91-58-7	2-Chloronaphthalene	58000	U
88-74-4	2-Nitroaniline	12000	U
131-11-3	Dimethyl Phthalate	58000	U
208-96-8	Acenaphthylene	12000	U
		1300	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT53

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT53B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT53B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 45 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	58000	U
83-32-9	Acenaphthene	12000	U
51-28-5	2,4-Dinitrophenol	58000	U
100-02-7	4-Nitrophenol	58000	U
132-64-9	Dibenzofuran	12000	U
121-14-2	2,4-Dinitrotoluene	12000	U
606-20-2	2,6-Dinitrotoluene	12000	U
84-66-2	Diethylphthalate	12000	U
7005-72-3	4-Chlorophenyl-phenylether	12000	U
86-73-7	Fluorene	2000	J
100-10-6	4-Nitroaniline	58000	U
534-52-1	4,6-Dinitro-2-Methylphenol	58000	U
86-30-6	N-Nitrosodiphenylamine (1)	12000	U
101-55-3	4-Bromophenyl-phenylether	12000	U
118-74-1	Hexachlorobenzene	12000	U
87-86-5	Pentachlorophenol	58000	U
85-01-8	Phenanthrene	11000	J
120-12-7	Anthracene	5000	J
84-74-2	Di-n-Butylphthalate	12000	U
206-44-0	Fluoranthene	25000	
129-00-0	Pyrene	17000	
85-68-7	Butylbenzylphthalate	2300	J
91-94-1	3,3'-Dichlorobenzidine	24000	U
56-55-3	Benzo(a)Anthracene	12000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4100	J
218-01-9	Chrysene	12000	U
117-84-0	Di-n-Octyl Phthalate	12000	U
205-99-2	Benzo(b)Fluoranthene	14000	
207-08-9	Benzo(k)Fluoranthene	11000	J
50-32-8	Benzo(a)Pyrene	13000	
193-39-5	Indeno(1,2,3-cd)Pyrene	12000	
53-70-3	Dibenz(a,h)Anthracene	7600	J
191-24-2	Benzo(g,h,i)Perylene	11000	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT53

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT53B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT53B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 45 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/05/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 10

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.68	6000	~~J~~
2.		UNKNOWN ALKANE	8.53	5000	J
3.		UNKNOWN ORGANIC ACID	25.02	70000	J
4.		UNKNOWN ALKANE	27.22	50000	J
5.		UNKNOWN ORGANIC ACID	27.53	80000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT54

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT54B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT54B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 42 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)Ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl Alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
39638-32-9	bis(2-Chloroisopropyl)Ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-Di-n-Propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	5500	U
111-91-1	bis(2-Chloroethoxy)Methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	3900	
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-Methylphenol	1100	U
91-57-6	2-Methylnaphthalene	710	J
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5500	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5500	U
131-11-3	Dimethyl Phthalate	1100	U
208-96-8	Acenaphthylene	1100	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT54

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT54B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT54B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 42 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5500	U
83-32-9	Acenaphthene	600	J
51-28-5	2,4-Dinitrophenol	5500	U
100-02-7	4-Nitrophenol	5500	U
132-64-9	Dibenzofuran	1200	
121-14-2	2,4-Dinitrotoluene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1700	
100-10-6	4-Nitroaniline	5500	U
534-52-1	4,6-Dinitro-2-Methylphenol	5500	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5500	U
85-01-8	Phenanthrene	6000	
120-12-7	Anthracene	2200	
84-74-2	Di-n-Butylphthalate	1100	U
206-44-0	Fluoranthene	11000	
129-00-0	Pyrene	7600	
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2300	U
56-55-3	Benzo(a)Anthracene	4300	
117-81-7	bis(2-Ethylhexyl)Phthalate	1100	U
218-01-9	Chrysene	5400	
117-84-0	Di-n-Octyl Phthalate	1100	U
205-99-2	Benzo(b)Fluoranthene	11000	
207-08-9	Benzo(k)Fluoranthene	1100	U
50-32-8	Benzo(a)Pyrene	3800	
193-39-5	Indeno(1,2,3-cd)Pyrene	2800	
53-70-3	Dibenz(a,h)Anthracene	1100	U
191-24-2	Benzo(g,h,i)Perylene	2200	

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT54

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT54B

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT54B

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 42 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 7.4

Dilution Factor: 1.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.32	3000	J
2.		UNKNOWN ALKANE	7.32	2000	J
3.		UNKNOWN ALKANE	7.90	5000	J
4.		UNKNOWN	8.32	2000	J
5.		UNKNOWN ALKANE	8.53	7000	J
6.		UNKNOWN	8.63	3000	J
7.		UNKNOWN	8.85	4000	J
8.		UNKNOWN ALKANE	8.93	2000	J
9.		DECAHYDRO NAPHTHALENE ISOM	9.10	3000	J
10.		UNKNOWN ALKANE	9.52	2000	J
11.		UNKNOWN ALKANE	9.62	2000	J
12.		UNKNOWN	9.77	2000	J
13.		UNKNOWN ALKANE	10.50	6000	J
14.		UNKNOWN	10.88	3000	J
15.		UNKNOWN ALKANE	21.45	3000	J
16.		UNKNOWN	23.65	6000	J
17.		UNKNOWN	25.18	4000	J
18.		UNKNOWN ORGANIC ACID	25.47	10000	J
19.		UNKNOWN	27.57	7000	J
20.		UNKNOWN	35.48	20000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT40

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT40B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT40B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 7 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	710	U
111-44-4	bis(2-Chloroethyl)Ether	710	U
95-57-8	2-Chlorophenol	710	U
541-73-1	1,3-Dichlorobenzene	710	U
106-46-7	1,4-Dichlorobenzene	710	U
100-51-6	Benzyl Alcohol	710	U
95-50-1	1,2-Dichlorobenzene	710	U
95-48-7	2-Methylphenol	710	U
39638-32-9	bis(2-Chloroisopropyl)Ether	710	U
106-44-5	4-Methylphenol	710	U
621-64-7	N-Nitroso-Di-n-Propylamine	710	U
67-72-1	Hexachloroethane	710	U
98-95-3	Nitrobenzene	710	U
78-59-1	Isophorone	710	U
88-75-5	2-Nitrophenol	710	U
105-67-9	2,4-Dimethylphenol	710	U
65-85-0	Benzoic Acid	3400	U
111-91-1	bis(2-Chloroethoxy)Methane	710	U
120-83-2	2,4-Dichlorophenol	710	U
120-82-1	1,2,4-Trichlorobenzene	710	U
91-20-3	Naphthalene	710	U
106-47-8	4-Chloroaniline	710	U
87-68-3	Hexachlorobutadiene	710	U
59-50-7	4-Chloro-3-Methylphenol	710	U
91-57-6	2-Methylnaphthalene	710	U
77-47-4	Hexachlorocyclopentadiene	710	U
88-06-2	2,4,6-Trichlorophenol	710	U
95-95-4	2,4,5-Trichlorophenol	3400	U
91-58-7	2-Chloronaphthalene	710	U
88-74-4	2-Nitroaniline	3400	U
131-11-3	Dimethyl Phthalate	710	U
208-96-8	Acenaphthylene	710	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT40

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT40B

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT40B

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 7 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 6.6

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3400	U
83-32-9	Acenaphthene	710	U
51-28-5	2,4-Dinitrophenol	3400	U
100-02-7	4-Nitrophenol	3400	U
132-64-9	Dibenzofuran	710	U
121-14-2	2,4-Dinitrotoluene	710	U
606-20-2	2,6-Dinitrotoluene	710	U
84-66-2	Diethylphthalate	710	U
7005-72-3	4-Chlorophenyl-phenylether	710	U
86-73-7	Fluorene	710	U
100-10-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-Methylphenol	3400	U
86-30-6	N-Nitrosodiphenylamine (1)	3400	U
101-55-3	4-Bromophenyl-phenylether	710	U
118-74-1	Hexachlorobenzene	710	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	3400	U
120-12-7	Anthracene	79	J
84-74-2	Di-n-Butylphthalate	710	U
206-44-0	Fluoranthene	710	U
129-00-0	Pyrene	220	J
85-68-7	Butylbenzylphthalate	260	J
91-94-1	3,3'-Dichlorobenzidine	270	J
56-55-3	Benzo(a)Anthracene	1400	U
117-81-7	bis(2-Ethylhexyl)Phthalate	300	J
218-01-9	Chrysene	510	J
117-84-0	Di-n-Octyl Phthalate	340	J
205-99-2	Benzo(b)Fluoranthene	150	J
207-08-9	Benzo(k)Fluoranthene	460	J
50-32-8	Benzo(a)Pyrene	710	U
193-39-5	Indeno(1,2,3-cd)Pyrene	710	U
53-70-3	Dibenz(a,h)Anthracene	710	U
191-24-2	Benzo(g,h,i)Perylene	710	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT40

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT40B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT40B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 7 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.00	600	JN
2.		UNKNOWN	5.55	2000	J
3.		UNKNOWN	6.27	3000	J
4.		UNKNOWN	6.53	300	J
5.		UNKNOWN	9.15	300	J
6.		UNKNOWN ORGANIC ACID	15.93	400	J
7.		UNKNOWN PHTHALATE	24.93	800	J
8.		UNKNOWN SILOXANE	25.07	400	J
9.		UNKNOWN ORGANIC ACID	30.28	3000	J
10.		UNKNOWN	33.02	2000	J
11.		UNKNOWN	33.28	1000	J
12.		UNKNOWN	34.30	2000	J
13.		UNKNOWN	34.97	2000	J
14.		UNKNOWN	35.58	3000	J
15.		UNKNOWN	36.83	8000	J
16.		UNKNOWN	37.60	7000	J
17.		UNKNOWN	38.48	4000	J
18.		UNKNOWN	38.62	4000	J
19.		UNKNOWN	39.27	3000	J
20.		UNKNOWN	39.43	2000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT41B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT41B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	690	U
111-44-4	bis(2-Chloroethyl)Ether	690	U
95-57-8	2-Chlorophenol	690	U
541-73-1	1,3-Dichlorobenzene	690	U
106-46-7	1,4-Dichlorobenzene	690	U
100-51-6	Benzyl Alcohol	690	U
95-50-1	1,2-Dichlorobenzene	690	U
95-48-7	2-Methylphenol	690	U
39638-32-9	bis(2-Chloroisopropyl)Ether	690	U
106-44-5	4-Methylphenol	690	U
621-64-7	N-Nitroso-Di-n-Propylamine	690	U
67-72-1	Hexachloroethane	690	U
98-95-3	Nitrobenzene	690	U
78-59-1	Isophorone	690	U
88-75-5	2-Nitrophenol	690	U
105-67-9	2,4-Dimethylphenol	690	U
65-85-0	Benzoic Acid	3300	U
111-91-1	bis(2-Chloroethoxy)Methane	690	U
120-83-2	2,4-Dichlorophenol	690	U
120-82-1	1,2,4-Trichlorobenzene	690	U
91-20-3	Naphthalene	690	U
106-47-8	4-Chloroaniline	690	U
87-68-3	Hexachlorobutadiene	690	U
59-50-7	4-Chloro-3-Methylphenol	690	U
91-57-6	2-Methylnaphthalene	690	U
77-47-4	Hexachlorocyclopentadiene	690	U
88-06-2	2,4,6-Trichlorophenol	690	U
95-95-4	2,4,5-Trichlorophenol	690	U
91-58-7	2-Chloronaphthalene	3300	U
88-74-4	2-Nitroaniline	690	U
131-11-3	Dimethyl Phthalate	3300	U
208-96-8	Acenaphthylene	690	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT41B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT41B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3300	U
83-32-9	Acenaphthene	690	U
51-28-5	2,4-Dinitrophenol	3300	U
100-02-7	4-Nitrophenol	3300	U
132-64-9	Dibenzofuran	690	U
121-14-2	2,4-Dinitrotoluene	690	U
606-20-2	2,6-Dinitrotoluene	690	U
84-66-2	Diethylphthalate	690	U
7005-72-3	4-Chlorophenyl-phenylether	690	U
86-73-7	Fluorene	690	U
100-10-6	4-Nitroaniline	3300	U
534-52-1	4,6-Dinitro-2-Methylphenol	3300	U
86-30-6	N-Nitrosodiphenylamine (1)	690	U
101-55-3	4-Bromophenyl-phenylether	690	U
118-74-1	Hexachlorobenzene	690	U
87-86-5	Pentachlorophenol	3300	U
85-01-8	Phenanthrene	690	U
120-12-7	Anthracene	690	U
84-74-2	Di-n-Butylphthalate	690	U
206-44-0	Fluoranthene	690	U
129-00-0	Pyrene	690	U
85-68-7	Butylbenzylphthalate	690	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)Anthracene	690	U
117-81-7	bis(2-Ethylhexyl)Phthalate	69	J
218-01-9	Chrysene	690	U
117-84-0	Di-n-Octyl Phthalate	690	U
205-99-2	Benzo(b)Fluoranthene	690	U
207-08-9	Benzo(k)Fluoranthene	690	U
50-32-8	Benzo(a)Pyrene	690	U
193-39-5	Indeno(1,2,3-cd)Pyrene	690	U
53-70-3	Dibenz(a,h)Anthracene	690	U
191-24-2	Benzo(g,h,i)Perylene	690	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT41B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT41B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.20	500	J
2.		UNKNOWN PHTHALATE	34.12	500	J
3.		UNKNOWN PHTHALATE	34.35	600	J
4.		UNKNOWN PHTHALATE	34.42	700	J
5.		UNKNOWN PHTHALATE	34.65	1000	J
6.		UNKNOWN PHTHALATE	34.73	500	J
7.		UNKNOWN PHTHALATE	34.82	500	J
8.		UNKNOWN ALKANE	35.30	1000	J
9.		UNKNOWN ALKANE	37.08	1000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT42B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT42B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 9 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	730	U
111-44-4	bis(2-Chloroethyl)Ether	730	U
95-57-8	2-Chlorophenol	730	U
541-73-1	1,3-Dichlorobenzene	730	U
106-46-7	1,4-Dichlorobenzene	730	U
100-51-6	Benzyl Alcohol	730	U
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
39638-32-9	bis(2-Chloroisopropyl)Ether	730	U
106-44-5	4-Methylphenol	730	U
621-64-7	N-Nitroso-Di-n-Propylamine	730	U
67-72-1	Hexachloroethane	730	U
98-95-3	Nitrobenzene	730	U
78-59-1	Isophorone	730	U
88-75-5	2-Nitrophenol	730	U
105-67-9	2,4-Dimethylphenol	730	U
65-85-0	Benzoic Acid	3500	U
111-91-1	bis(2-Chloroethoxy)Methane	730	U
120-83-2	2,4-Dichlorophenol	730	U
120-82-1	1,2,4-Trichlorobenzene	730	U
91-20-3	Naphthalene	730	U
106-47-8	4-Chloroaniline	730	U
87-68-3	Hexachlorobutadiene	730	U
59-50-7	4-Chloro-3-Methylphenol	730	U
91-57-6	2-Methylnaphthalene	730	U
77-47-4	Hexachlorocyclopentadiene	730	U
88-06-2	2,4,6-Trichlorophenol	730	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	3500	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethyl Phthalate	3500	U
208-96-8	Acenaphthylene	730	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: BDT42B

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: BDT42B

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 9 dec.

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 7.5

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	730	U
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
606-20-2	2,6-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-10-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-Methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	730	U
101-55-3	4-Bromophenyl-phenylether	730	U
118-74-1	Hexachlorobenzene	730	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	730	U
120-12-7	Anthracene	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	150	J
129-00-0	Pyrene	150	J
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	150	J
117-81-7	bis(2-Ethylhexyl)Phthalate	730	U
218-01-9	Chrysene	150	J
117-84-0	Di-n-Octyl Phthalate	730	U
205-99-2	Benzo(b)Fluoranthene	150	J
207-08-9	Benzo(k)Fluoranthene	730	U
50-32-8	Benzo(a)Pyrene	730	U
193-39-5	Indeno(1,2,3-cd)Pyrene	730	U
53-70-3	Dibenz(a,h)Anthracene	730	U
191-24-2	Benzo(g,h,i)Perylene	730	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: BDT42B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BDT42B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 9 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) Y pH: 7.5 Dilution Factor: 1.0

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.20	400	J
2.		UNKNOWN	33.38	300	J
3.		UNKNOWN PHTHALATE	34.63	400	J
4.		UNKNOWN ALKANE	35.30	800	J
5.		UNKNOWN ALKANE	37.08	700	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT55B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT55B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT55B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT55B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT55B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT55B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT56B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT56B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	10	U
111-91-1	bis(2-Chloroethoxy)Methane	50	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
		10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT56B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT56B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER

Lab Sample ID: BDT56B

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: BDT56B

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. dec.

Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH:

Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT57

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT57B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT57B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
39638-32-9	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT57

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT57B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT57B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-10-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BDT57

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: BDT57B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BDT57B

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. dec. Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/31/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT53

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 516734

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 45 dec. Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 4.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	58	U
319-85-7	beta-BHC	58	U
319-86-8	delta-BHC	58	U
58-89-9	Lindane	58	U
76-44-8	Heptachlor	58	U
309-00-2	Aldrin	58	U
1024-57-3	Heptachlor epoxide	58	U
959-98-8	Endosulfan I	58	U
60-57-1	Dieldrin	58	U
72-55-9	4,4'-DDE	120	U
72-20-8	Endrin	120	U
33213-65-9	Endosulfan II	120	U
72-54-8	4,4'-DDD	120	U
1031-07-8	Endosulfan sulfate	120	U
50-29-3	4,4'-DDT	120	U
72-43-5	Methoxychlor	120	U
53494-70-5	Endrin ketone	580	U
5103-71-9	alpha-Chlordane	120	U
5103-74-2	gamma-Chlordane	580	U
8001-35-2	Toxaphene	580	U
12674-11-2	Aroclor-1016	1200	U
11104-28-2	Aroclor-1221	580	U
11141-16-5	Aroclor-1232	580	U
53469-21-9	Aroclor-1242	580	U
12672-29-6	Aroclor-1248	580	U
11097-69-1	Aroclor-1254	580	U
11096-82-5	Aroclor-1260	1200	U
		1200	U

001829

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT54

Lab Name: ENCOTEC-AA

Contract: 68-D9-0033

Lab Code: ENCOT

Case No.: 13938

SAS No.: _____

SDG No.: BDT36

Matrix: (soil/water) SOIL

Lab Sample ID: 516744

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: _____

Level: (low/med) LOW

Date Received: 04/28/90

% Moisture: not dec. 43 dec. __

Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: 7.4

Dilution Factor: 4.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	56	U
319-85-7	beta-BHC	56	U
319-86-8	delta-BHC	56	U
58-89-9	Lindane	56	U
76-44-8	Heptachlor	56	U
309-00-2	Aldrin	56	U
1024-57-3	Heptachlor epoxide	56	U
959-98-8	Endosulfan I	56	U
60-57-1	Dieldrin	56	U
72-55-9	4,4'-DDE	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
1031-07-8	Endosulfan sulfate	110	U
50-29-3	4,4'-DDT	110	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin ketone	560	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	560	U
8001-35-2	Toxaphene	560	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	560	U
11141-16-5	Aroclor-1232	560	U
53469-21-9	Aroclor-1242	560	U
12672-29-6	Aroclor-1248	560	U
11097-69-1	Aroclor-1254	560	U
11096-82-5	Aroclor-1260	1100	U
		1100	U

001837

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT40

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 516702

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 7 dec. ___ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/01/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	17	U
319-85-7	beta-BHC	17	U
319-86-8	delta-BHC	17	U
58-89-9	Lindane	17	U
76-44-8	Heptachlor	17	U
309-00-2	Aldrin	17	U
1024-57-3	Heptachlor epoxide	17	U
959-98-8	Endosulfan I	17	U
60-57-1	Dieldrin	17	U
72-55-9	4,4'-DDE	34	U
72-20-8	Endrin	34	U
33213-65-9	Endosulfan II	34	U
72-54-8	4,4'-DDD	34	U
1031-07-8	Endosulfan sulfate	34	U
50-29-3	4,4'-DDT	34	U
72-43-5	Methoxychlor	34	U
53494-70-5	Endrin ketone	170	U
5103-71-9	alpha-Chlordane	34	U
5103-74-2	gamma-Chlordane	170	U
8001-35-2	Toxaphene	170	U
12674-11-2	Aroclor-1016	340	U
11104-28-2	Aroclor-1221	170	U
11141-16-5	Aroclor-1232	170	U
53469-21-9	Aroclor-1242	170	U
12672-29-6	Aroclor-1248	170	U
11097-69-1	Aroclor-1254	170	U
11096-82-5	Aroclor-1260	340	U

001811

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT41

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 51671

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 4 dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.3	U
319-85-7	beta-BHC	8.3	U
319-86-8	delta-BHC	8.3	U
58-89-9	Lindane	8.3	U
76-44-8	Heptachlor	8.3	U
309-00-2	Aldrin	8.3	U
1024-57-3	Heptachlor epoxide	8.3	U
959-98-8	Endosulfan I	8.3	U
60-57-1	Dieldrin	8.3	U
72-55-9	4,4'-DDE	17	U
72-20-8	Endrin	17	U
33213-65-9	Endosulfan II	17	U
72-54-8	4,4'-DDD	17	U
1031-07-8	Endosulfan sulfate	17	U
50-29-3	4,4'-DDT	17	U
72-43-5	Methoxychlor	17	U
53494-70-5	Endrin ketone	83	U
5103-71-9	alpha-Chlordane	17	U
5103-74-2	gamma-Chlordane	83	U
8001-35-2	Toxaphene	83	U
12674-11-2	Aroclor-1016	170	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	83	U
53469-21-9	Aroclor-1242	83	U
12672-29-6	Aroclor-1248	83	U
11097-69-1	Aroclor-1254	83	U
11096-82-5	Aroclor-1260	170	U

001818

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT42

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT36

Matrix: (soil/water) SOIL Lab Sample ID: 51672

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. 9 dec. __ Date Extracted: 04/30/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 05/29/90

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.8	U
319-85-7	beta-BHC	8.8	U
319-86-8	delta-BHC	8.8	U
58-89-9	Lindane	8.8	U
76-44-8	Heptachlor	8.8	U
309-00-2	Aldrin	8.8	U
1024-57-3	Heptachlor epoxide	8.8	U
959-98-8	Endosulfan I	8.8	U
60-57-1	Dieldrin	8.8	U
72-55-9	4,4'-DDE	18	U
72-20-8	Endrin	18	U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	3.7	J
53494-70-5	Endrin ketone	88	U
5103-71-9	alpha-Chlordane	18	U
5103-74-2	gamma-Chlordane	88	U
8001-35-2	Toxaphene	88	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	88	U
53469-21-9	Aroclor-1242	88	U
12672-29-6	Aroclor-1248	88	U
11097-69-1	Aroclor-1254	88	U
11096-82-5	Aroclor-1260	180	U
		180	U

001823

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT55

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51675

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. ___ dec. ___ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	0.050 U
319-85-7	beta-BHC	0.050 U
319-86-8	delta-BHC	0.050 U
58-89-9	Lindane	0.050 U
76-44-8	Heptachlor	0.050 U
309-00-2	Aldrin	0.050 U
1024-57-3	Heptachlor epoxide	0.050 U
959-98-8	Endosulfan I	0.050 U
60-57-1	Dieldrin	0.050 U
72-55-9	4,4'-DDE	0.10 U
72-20-8	Endrin	0.10 U
33213-65-9	Endosulfan II	0.10 U
72-54-8	4,4'-DDD	0.10 U
1031-07-8	Endosulfan sulfate	0.10 U
50-29-3	4,4'-DDT	0.10 U
72-43-5	Methoxychlor	0.10 U
53494-70-5	Endrin ketone	0.50 U
5103-71-9	alpha-Chlordane	0.10 U
5103-74-2	gamma-Chlordane	0.50 U
8001-35-2	Toxaphene	0.50 U
12674-11-2	Aroclor-1016	1.0 U
11104-28-2	Aroclor-1221	0.50 U
11141-16-5	Aroclor-1232	0.50 U
53469-21-9	Aroclor-1242	0.50 U
12672-29-6	Aroclor-1248	0.50 U
11097-69-1	Aroclor-1254	0.50 U
11096-82-5	Aroclor-1260	1.0 U
		1.0 U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT56

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51676

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. __ dec. __ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BDT57

Lab Name: ENCOTEC-AA Contract: 68-D9-0033

Lab Code: ENCOT Case No.: 13938 SAS No.: _____ SDG No.: BDT27

Matrix: (soil/water) WATER Lab Sample ID: 51677

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

Level: (low/med) LOW Date Received: 04/28/90

% Moisture: not dec. __ dec. __ Date Extracted: 05/01/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 05/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	Lindane	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.050	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.10	U
53494-70-5	Endrin ketone	0.50	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	0.50	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	1.0	U
		1.0	U

FORM I PEST

RJ LeeGroup

The Materials Characterization Specialists

LABORATORY REPORT
****

NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 08837
201-225-6160
ATTN: JOHN HARRISON

REPORT DATE: JUNE 21, 1990
SAMPLE RECEIPT DATE: MAY 18, 1990
RJ LEE GRP JOB NUMBER: ATW-005040
CLIENT JOB NUMBER: SAS# 5632B
PURCHASE ORDER NUMBER:

ANALYSIS: ASBESTOS IN WATER

METHOD: TRANSMISSION ELECTRON MICROSCOPY, EPA METHOD 600/4-80-005

SAMPLE INFORMATION

RJ LEE GR. SAMPLE #	CLIENT SAMPLE #	SAMPLE DESCRIPTION	FILTER AREA (SQ MM)	FILTERED VOLUME (ML)	WATER CLARITY
57679	SAS GW-1	ASBESTOS, LOW CONCENTRATION, IN WATER	1063.6	5	CLOUDY
57680	SAS GW-2	ASBESTOS, LOW CONCENTRATION, IN WATER	1063.6	5	CLOUDY
57681	SAS GW-3	ASBESTOS, LOW CONCENTRATION, IN WATER	1063.6	2	CLOUDY
57682	SAS GW-4	ASBESTOS, LOW CONCENTRATION, IN WATER	1063.6	1	CLOUDY
57683	SAS GW-5	ASBESTOS, LOW CONCENTRATION, IN WATER	1063.6	2	CLOUDY
FILTER		RJ LEE GROUP: FILTER BLANK	1063.6	N/A	N/A
H2O		RJ LEE GROUP: H2O BLANK	1063.6	1000	CLEAR
HCL		RJ LEE GROUP: HCL BLANK	1063.6	2	CLEAR

Monica M. McCloy
SAMPLE PREPARATOR

Monica M. McCloy
TEM OPERATOR-ANALYST

Tom Sagenhart
LABORATORY MANAGER

6-21-90
DATE

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RJ LeeGroup

The Materials Characterization Specialists

LABORATORY REPORT
****

NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 08837
201-225-6160
ATTN: JOHN HARRISON

REPORT DATE: JUNE 21, 1990
SAMPLE RECEIPT DATE: MAY 18, 1990
RJ LEE GRP JOB NUMBER: ATW-005040
CLIENT JOB NUMBER: SAS# 5632B
PURCHASE ORDER NUMBER:

ANALYSIS: ASBESTOS IN WATER

METHOD: TRANSMISSION ELECTRON MICROSCOPY, EPA METHOD 600/4-80-005

ANALYTICAL INFORMATION, PART 1

AREA OF GRID OPENING : 0.006704 SQ MM
DETECTION LIMIT : 1
(STRUCTURES PER TOTAL AREA SCANNED)

TEM ACCELERATING POTENTIAL: 100 KV
TEM: PHILIPS CM12
ENERGY DISPERSIVE X-RAY ANALYZER: EDAX 9800 PLUS

RJ LEE GR. SAMPLE #	CLIENT SAMPLE #	GRID OPENINGS SCANNED	FILTER AREA ANALYZED (SQ MM)	ASBESTOS STRUCTURES DETECTED WITH ASPECT RATIO > 3 : 1 < 10.0 UM	>= 10.0 UM	TOTAL	TOTAL STRUCTURE CONCENTRATION (MILL. STR/L)	> 10 UM STRUCTURE CONCENTRATION (MILL. STR/L)	TYPE OF ASBESTOS
57679	SAS GW-1	20	0.1341	0	0	0	< 1.6	< 1.6	NONE DETECTED
57680	SAS GW-2	20	0.1341	13	2	15	23.8	3.2	CHRYSOTILE
57681	SAS GW-3	20	0.1341	1	0	1	4.0	< 4.0	CHRYSOTILE
57682	SAS GW-4	20	0.1341	0	1	1	7.9	7.9	CHRYSOTILE
57683	SAS GW-5	20	0.1341	1	0	1	4.0	< 4.0	CHRYSOTILE
FILTER		10	0.0670	0	0	0	NOT APPLICABLE	NOT APPL.	NONE DETECTED
H20		10	0.0670	0	0	0	0.0	0.0	NONE DETECTED
HCL		10	0.0670	0	0	0	7.9	7.9	NONE DETECTED

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RJ LeeGroup

The Materials Characterization Specialists

LABORATORY REPORT

****

NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 08837
201-225-6160
ATTN: JOHN HARRISON

REPORT DATE: JUNE 21, 1990
SAMPLE RECEIPT DATE: MAY 18, 1990
RJ LEE GRP JOB NUMBER: ATW-005040
CLIENT JOB NUMBER: SAS# 5632B
PURCHASE ORDER NUMBER:

ANALYSIS: ASBESTOS IN WATER

METHOD: TRANSMISSION ELECTRON MICROSCOPY, EPA METHOD 600/4-80-005

ANALYTICAL INFORMATION, PART 2

RJ LEE GR. SAMPLE #	CLIENT SAMPLE #	AVERAGE FIBER LENGTH (UM)	FIBER LENGTH STD. DEV. (UM)	AVERAGE FIBER WIDTH (UM)	FIBER WIDTH STD. DEV. (UM)	AVERAGE ASPECT RATIO	AVERAGE STRUCTURE MASS (FEMTOGRAMS)	MASS CONCENTRATION (UG/L)
57679	SAS GW-1	NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	< 0.002
57680	SAS GW-2	4.1	4.3	0.020	0.006	245.9	5.1	0.122
57681	SAS GW-3	0.9	0.0	0.020	0.000	45.0	1.2	0.005
57682	SAS GW-4	13.5	0.0	0.050	0.000	270.0	132.5	1.051
57683	SAS GW-5	1.8	0.0	0.010	0.000	180.0	0.6	0.002
FILTER		NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	0.000
H20		NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	0.000
HCL		NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	NONE DET.	0.008

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RJ LeeGroup

The Materials Characterization Specialists

LABORATORY REPORT
****

NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 08837
201-225-6160
ATTN: JOHN HARRISON

REPORT DATE: JUNE 21, 1990
SAMPLE RECEIPT DATE: MAY 18, 1990
RJ LEE GRP JOB NUMBER: ATW-005040
CLIENT JOB NUMBER: SAS# 5632B
PURCHASE ORDER NUMBER:

ANALYSIS: ASBESTOS IN WATER

METHOD: TRANSMISSION ELECTRON MICROSCOPY, EPA METHOD 600/4-80-005

ESSENTIAL NOTES AND DISCLAIMERS

1. THE ASBESTOS MINERALS SOUGHT IN EACH SAMPLE INCLUDE CHRYSOTILE (CLINOCHRYSOTILE, ORTHOCHRYSOTILE AND PARACHRYSOTILE), AMOSITE (GRUNERITE AND CUMMINGTONITE), CROCIDOLITE (RIEBECKITE), ANTHOPHYLLITE (ANTHOPHYLLITE AND MAGNESIO-ANTHOPHYLLITE) TREMOLITE AND ACTINOLITE. NAMES GIVEN IN PARENTHESES INDICATE THE PROPER MINERALOGICAL TERM FOR ASBESTOS VARIETIES KNOWN BY AN IMPRECISE NAME. DEFINITIONS USED FOR THE AMPHIBOLES ARE THOSE OF THE INTERNATIONAL MINERALOGICAL ASSOCIATION (1978)

2. ASBESTOS STRUCTURES INCLUDED IN THE STRUCTURE CONCENTRATION INCLUDE FIBERS, BUNDLES, CLUSTERS AND MATRICES. SEE DEFINITIONS IN AHERA REGULATIONS.

3. THE NUMBER OF STRUCTURES USED IN CALCULATING DETECTION LIMITS MAY VARY DEPENDING UPON THE CLEANLINESS OF FIELD BLANKS AND THE CLEANLINESS OF LABORATORY BLANKS CONTEMPORANEOUS WITH THESE SAMPLES.

4. ASBESTOS STRUCTURES GREATER THAN TEN MICROMETERS (UM) IN LENGTH ARE REPORTED SEPARATELY BECAUSE THESE ARE THE IMPORTANT STRUCTURES IN THE EPA GUIDELINES.

5. TEM COEFFICIENTS OF VARIATION RANGE FROM APPROXIMATELY 0.5 AT LOW FIBER CONCENTRATIONS TO 0.1 AT HIGH FIBER CONCENTRATIONS.

6. UG = MICROGRAM (ONE MILLIONTH GRAM), UM = MICROMETER (ONE MILLIONTH METER), FEMTOGRAM = ONE QUADRILLIONTH GRAM

7. THE TEST REPORT ONLY RELATES TO THE ITEMS TESTED.

8. THIS REPORT IS NOT VALID UNLESS IT BEARS THE NAME OF A NVLAP APPROVED SIGNATORY.

9. ANY REPRODUCTION OF THIS DOCUMENT MUST INCLUDE THE ENTIRE DOCUMENT IN ORDER FOR THE REPORT TO BE VALID.

10. NEITHER THE NVLAP ACCREDITATION OF THIS LABORATORY NOR THIS REPORT CAN BE USED TO CLAIM PRODUCT ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U.S. GOVERNMENT.

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RECEIVED

JUN 1 7 REC'D
NUS CORPORATION
REGION II
SENT TO _____

ENVIRONMENTAL PROTECTION AGENCY
Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

SAS Number
5362B

SPECIAL ANALYTICAL SERVICE
PACKING LIST

Sampling Office:	Sampling Date(s):	Ship To:	For Lab Use Only
NUS-FIT	4/26 + 4/27/90	RJ Lee Group	
Sampling Contact:	Date Shipped:	10366 Battle View Pkwy	Date Samples Rec'd:
J. Harrison (name)	5-17-90	Manassas, Virginia 22110	
	Site Name/Code:		Received By:
(201) 225-6160 (phone)		Attn: Tom Dagehart	

	Sample Numbers	Sample Description i.e., Analysis, Matrix, Concentration	Sample Condition on Receipt at Lab
1.	SAS-GW1	Asbestos low concentration, H_2O	
2.	SAS-GW2	" " "	
3.	SAS-GW3	" " "	
4.	SAS-GW4	" " "	
5.	SAS-GW5	" " "	
6.	SAS-S-1	" " Soil	
7.	SAS-S-2	" " Soil	
8.	SAS-S-3	" " Soil	
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

For Lab Use Only

White - SMO Copy, Yellow - Region Copy, Pink - Lab Copy for return to SMO, Gold - Lab Copy

SAS #5362B

CHAIN OF CUSTODY RECORD

02-9001-10

~~Case~~ No. JH 4/27/90 ~~23638~~

ENVIRONMENTAL PROTECTION AGENCY – REGION II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: NUS Corp
1090 King Georges Post Rd
Edison NJ 08837

Sample Number	Number of Containers	Description of Samples
SAS GW1	1	1 1lt poly, low conc, asbestos, H^2O
SAS GW2	1	1 1lt poly, low conc, asbestos, H^2O
SAS GW3	1	1 1lt poly, low conc, asbestos, H^2O
SAS GW4	1	1 1lt poly, low conc, asbestos, H^2O
SAS GW5	1	1 1lt poly, low conc, asbestos, H^2O
SAS S-1	1	1-8oz jar, low conc, asbestos, soil
SAS S-2	1	1-8oz jar, low conc, asbestos, soil
SAS-S-3	1	1-8oz jar, low conc, asbestos, soil

Person Assuming Responsibility for Sample: J. Harrison [signature] — Time: 1500 — Date: 4/27/90

Sample Number	Relinquished By:	Received By:	Time	Date	Reason for Change of Custody
All Above	J. Harrison [signature]	John Harrison [signature]	1500	4/27/90	Samples taken to Archive Room for HOLD
All Above	J. Harrison [signature]	Deloris M. Sparks	1330 8:45AM	5/17/90 5/18/90	Samples shipped to Lab for analysis

Page No.

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-29-90
RJL QC #: WQ005040
RJL JOB #: ATW005040

SAMPLE #: 57679
CLIENT NAME: NUS Corp.
CLIENT SAMPLE #: SAS GW-1
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: MM
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 20
ASBESTOS <5: Ø
NON-ASBESTOS <5: 28
AMBIGUIOUS <5: Ø
ASBESTOS >5: Ø
NON-ASBESTOS >5: 1
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	1	1.2	.1	AMP	CHR	NAS	AMB	UNK	B C M	Al, Si, Fe	✓		✓
	2	.8	.1	AMP	CHR	NAS	AMB	UNK	B C M	Al, Si, Fe	✓		N
	3	.9	.08	AMP	CHR	NAS	AMB	UNK	B C M	Al, Si, Fe	✓		N
2	4	2.1	.05	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si, Al	✓		✓
	5	1.2	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si, Al	✓		✓
3	6	4.6	.04	AMP	CHR	NAS	AMB	UNK	B C M	Fe	✓		✓
4	7	1.4	.15	AMP	CHR	NAS	AMB	UNK	B C M	Fe	✓		✓
5	8	3.7	.2	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si, Al	✓		✓
6	9	2.0	.15	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si, Al	✓		✓
	10	3.2	.2	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si, Al	✓		✓
	11	3.9	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si, Al, Fe	✓		✓
7	12	1.8	.2	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si	✓		✓
8	13	2.2	.3	AMP	CHR	NAS	AMB	UNK	B C M	Ti, Fe	✓		✓
	14	1.6	.2	AMP	CHR	NAS	AMB	UNK	B C M 3	Fe	✓		✓
	15	2.0	.15	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
9	16	9	.03	AMP	CHR	NAS	AMB	UNK	B C M	Fe, Si, Al	✓		✓
	17	2.2	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si, Fe, Al	✓		✓
	18	1.5	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
10	19	1.1	.03	AMP	CHR	NAS	AMB	UNK	B C M	Si, Al	✓		N

COMMENTS:

moderate particulate loading.

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 5ml
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-29-90
RJL QC #: WQ005040
RJL JOB #: ATW005040

L SAMPLE #: 57679
LIENT NAME: NUS Corp.
LIENT SAMPLE #: SAS GW-1
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
ATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK:
GRID BOX #: 217

GRID OPENINGS:
ASBESTOS <5:
NON-ASBESTOS <5:
AMBIGUIOUS <5:
ASBESTOS >5:
NON-ASBESTOS >5:
AMBIGUIOUS >5:

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
11	20	6.9	.3	AMP	CHR	NAS	AMB	UNK	B C M	Fe	✓		✓
	21	1.2	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si, Al	✓		✓
	22	2.9	.15	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
12	23	4.1	.2	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
	24	3.9	.15	AMP	CHR	NAS	AMB	UNK	B C M 3	Si Al	✓		✓
13	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
14	25	2.6	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
15	26	2.0	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
16	27	1.1	.1	AMP	CHR	NAS	AMB	UNK	B C M	Si Al	✓		✓
17	28	1.8	.15	AMP	CHR	NAS	AMB	UNK	B C M 3	Si Al Fe	✓		✓
18	29	2.0	.1	AMP	CHR	NAS	AMB	UNK	B C M	Ti	✓		✓
19	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
20	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION:
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-29-90
RJL QC #: WQ 005040
RJL JOB #: ATW005040

RJL SAMPLE #: 57680
CLIENT NAME: NUS Corp.
CLIENT SAMPLE #: SAS GW-2
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 20
ASBESTOS <5: 11
NON-ASBESTOS <5: 7
AMBIGUIOUS <5: 1
ASBESTOS >5: ~~3~~ 4
NON-ASBESTOS >5: 3
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	1	1.0	.02	AMP	CHR	NAS	(AMB)	UNK	B C (M) 1	covered by matrix when filtered			3156
	2	1.1	.08	AMP	CHR	(NAS)	AMB	UNK	B C (M)	Si Fe, Al	✓		✓
	3	6.0	.3	AMP	CHR	(NAS)	AMB	UNK	B C M	Fe, Si	✓		
2	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
3	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
4	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
6	4	7.5	.02	AMP	(CHR)	NAS	AMB	UNK	B C (M) 1	Si Mg	576804		3199
	5	1.2	.03	AMP	(CHR)	NAS	AMB	UNK	B C M	too close to the edge			3200
7	6	.5	.01	AMP	(CHR)	NAS	AMB	UNK	B C M	too close to the edge			✓
8	7	14.5	.01	AMP	(CHR)	NAS	AMB	UNK	B C (M) 1	Si Mg	576807		✓
9	8	1.6	.02	AMP	(CHR)	NAS	AMB	UNK	B C M	Si Mg	576808		✓
	9	5.2	.02	AMP	(CHR)	NAS	AMB	UNK	B C (M) 1	Si Mg	576809		✓
10	10	1.9	.02	AMP	CHR	(NAS)	AMB	UNK	B C M	Si	✓		N
11	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
12	11	3.1	.02	AMP	CHR	(NAS)	AMB	UNK	B C M	Si	✓		N
	12	.6	.02	AMP	CHR	(NAS)	AMB	UNK	B C M	Si	✓		N
	13	.8	.02	AMP	CHR	(NAS)	AMB	UNK	B C M	Si	✓		N
	14	.5	.02	AMP	CHR	(NAS)	AMB	UNK	B C M	Si	✓		N

COMMENTS:

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 5ml
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-29-90
RJL QC #: WQ005040
RJL JOB #: ATW005040

.AMPLE #: 57680
.ENT NAME: NUS Corp.
.IENT SAMPLE #: SAS GW-2
.R VOLUME(LITERS) —
.ALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II✓
.TRIX TYPE:
IR___ WATER✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK:
GRID BOX #: 217

GRID OPENINGS:
ASBESTOS <5:
NON-ASBESTOS <5:
AMBIGUIOUS <5:
ASBESTOS >5:
NON-ASBESTOS >5:
AMBIGUIOUS >5:

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
13	15	6	.01	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
	16	3.2	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
	17	15.8	.7	AMP	CHR	NAS	AMB	UNK	B C M	Si Fe	✓		N
	18	16.9	.4	AMP	CHR	NAS	AMB	UNK	B C M	Si Fe	✓		N
14	19	1.0	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
15	20	1.4	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
16	21	4.8	.03	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
	22	.6	.01	AMP	CHR	NAS	AMB	UNK	B C M	Si	✓		N
	23	2.0	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
17	24	1.9	.03	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
18	25	13.6	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
19	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
20	26	1.8	.02	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg	✓		✓
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

PREP: DIRECT___ INDIRECT✓___ OTHER___
DILUTION:
FILTER TYPE: MCE✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-31-90
RJL QC #: WQ005040
RJL JOB #: ATW005040

JL SAMPLE #: 57681
LIENT NAME: NUS Corp.
LIENT SAMPLE #: SAS GW-3
AIR VOLUME(LITERS) —
NALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 20
ASBESTOS <5: 1
NON-ASBESTOS <5: 4
AMBIGUIOUS <5: 1
ASBESTOS >5: Ø
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
2	1	1.9	.1	AMP	CHR	NAS	AMB	UNK	B C M	SiAl Fe	✓		✓
	2	1.3	.15	AMP	CHR	NAS	AMB	UNK	B C M	SiAl Fe	✓		✓
3	3	1.2	.08	AMP	CHR	NAS	AMB	UNK	B C M	too close to the edge			✓
4	4	2.1	.03	AMP	CHR	NAS	AMB	UNK	B C M 1	Fe	✓		✓
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
6	5 ~~NSD~~	.9	.02	AMP	CHR	NAS	AMB	UNK	B C M 1	Si Mg	576815		faded ✓
	6	1.2	.02	AMP	CHR	NAS	AMB	UNK	B C M 1	too close to the edge			N
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
11	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
12	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
13	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
14	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
15	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
16	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
17	NSD			AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:
Moderate to heavy particulate loading - non-asbestiform fibers present in large numbers: too numerous to count

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 2 ml
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 5-31-90
RJL QC #: WQ005040
RJL JOB #: ATW005040

SAMPLE #: 57681
CLIENT NAME: NUS Corp.
CLIENT SAMPLE #: SAS GW-3
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK:
GRID BOX #: 217

GRID OPENINGS:
ASBESTOS <5:
NON-ASBESTOS <5:
AMBIGUIOUS <5:
ASBESTOS >5:
NON-ASBESTOS >5:
AMBIGUIOUS >5:

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
18	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
19	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
20	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 2ml
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LeeGroup

The Materials Characterization Specialists

TEM CALIBRATION DATA

FOR PROJECT SAS 5632B

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX

Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

MAGNIFICATION CALIBRATION LOG FOR PHILIPS CM12 TRANSMISSION ELECTRON MICROSCOPE

DATE OF CALIBRATION	NEGATIVE NUMBER	OPERATOR INITIALS	ON-SCREEN CALIBRATION: GRATING LINES PER FULL SCREEN	AVERAGE APPARENT DIAMETERS: FULL SCREEN	AVERAGE APPARENT DIAMETERS: LARGE CIRCLE	AVERAGE APPARENT DIAMETERS: SMALL CIRCLE	ON-FILM CALIBRATION: NUMBER OF GRATING LINES	ACTUAL DISTANCE (mm)	AVERAGE MAGNIFIC. (X1000)
1-5-89	—	TD	16.4 / 16.6	7.6	1.99	.25	—	—	—
2-8-89	—	TD	17.0 / 17.2	7.9	2.06	.26	—	—	—
4-7-89	—	TD	16.8 / 16.9	7.8	2.03	.25	—	—	—
6-21-89	—	TD	16.5 / 16.6	7.7	2.00	.25	—	—	—
8-24-89	—	TD	16.7 / 16.7	7.7	2.01	.25	—	—	—
11-7-89	2603	TD	16.1 / 16.3	7.5	1.95	.24	6	60.50 / 60.50	21,780
1-4-90	2808	TD	16.8 / 16.6	7.7	2.01	.25	6	58.50 / 58.49	21,058
1-18-90	2876	TD	16.5 / 16.5	7.6	1.99	.25	6	59.70 / 59.65	21,483
2-15-90	2948	TD	16.5 / 165	7.6	1.99	.25	7	68.86 / 69.59	21,359
3-5-90	2995	mm	16.2 / 16.2	7.5	1.95	.24	6	60.30 / 60.84	21,805
3-14-90	3047	mm	16.8 / 16.7	7.8	2.02	.25	6	57.53 / 57.45	20,767
3-26-90	3093	mm	16.8 / 17.0	7.8	2.04	.25	6	57.56 / 58.32	20,857
4-2-90	3106	mm	16.7 / 16.7	7.7	2.01	.25	6	58.59 / 58.35	21,048
4-9-90	3116	mm	16.9 / 16.9	7.8	2.04	.25	6	57.56 / 59.15	21,078
4-16-90	3129	mm	16.8 / 16.8	7.8	2.04	.25	6	58.59 / 58.59	21,191
5-7-90	3155	mm	16.8 / 16.8	7.8	2.04	.25	6	59.51 / 60.36	21,575
5-14-90	3168	mm	16.8 / 16.9	7.8	2.03	.25	6	58.53 / 59.30	21,208
5-21-90	3186	mm	17.0 / 16.9	7.8	2.04	.25	6	61.35 / 61.50	22,111
5-29-90	3195	mm	16.8 / 16.8	7.8	2.04	.25	6	60.88 / 59.35	21,640
6-4-90	3204	mm	16.6 / 16.7	7.7	2.01	.25	6	59.79 / 60.05	21,569
6-15-90	3233	mm	16.6 / 16.82	7.7	2.0	.25	6	59.81 / 60.34	21,625
6-19-90	3238	mm	16.9 / 16.9	7.8	2.04	.25	6	59.57 / 60.01	21,519

UNLESS OTHERWISE NOTED THE FOLLOWING MAGNIFICATION CALIBRATION CONDITIONS ARE STANDARD:
NOMINAL MAGNIFICATION = 19,500-ON SCREEN, 22,000-ON FILM (SA MODE), HIGH TENSION = 100 KV, BEAM CURRENT = 15-30 uA, SPOT SIZE = 3, TILT = 0 DEG., CALIBRATION STANDARD = WAFFLE DIFFRACTION GRATING REPLICA (2160 LINES/mm, 0.463 um/LINE).
APPARENT DIAMETER OF FULL SCREEN IS 30.70 TIMES THE SMALL CIRCLE AND 3.84 TIMES THE LARGE CIRCLE.

RJ LEE GROUP, INC. 10366 BATTLEVIEW PARKWAY MANASSAS, VIRGINIA 22110 703-368-7880 FAX 703-368-7769

COPY

DIFFRACTION CALIBRATION LOG FOR PHILIPS CM12 TRANSMISSION ELECTRON MICROSCOPE

DATE OF DIFFRACTION PATTERN	NEGATIVE NUMBER	OPERATOR'S INITIALS	MICROPROC. ON-SCREEN GOLD D-VALUE	SMALL SCREEN LAYER LI. N-S	SMALL SCREEN LAYER LI. E-W	AVERAGE CAMERA CONSTANT (mm-A)	MAXIMUM CAMERA CONSTANT (mm-A)	MINIMUM CAMERA CONSTANT (mm-A)	PHI ANGLE (degrees)	MEASURER'S INITIALS
1-5-89		TD	2.36							
2-8-89		TD	2.36							
4-7-89		TVD	2.34							
6-21-89		TD	2.36							
7-17-89		TD	2.36							
8-24-89		TVD	2.34							
9-14-89		TD	2.36							
10-27-89	2559	mm	2.36	12	16	31.148	31.154	31.142	90°	TD
11-7-89	2599	mm	2.36	12	16	30.786	30.938	30.636	90°	TD
11-30-89	2637	TD	2.34	12	16	26.95	27.00	26.85	50°	JAM MM
12-11-89	2729	TD	2.36	12	16	27.256	27.389	27.094	45°	TD
12-18-89	2741	mm	2.36	12	16	27.115	27.141	27.094	0°	TD
12-27-89	2782	mm	2.36	12	16	27.092	27.177	26.989	45°	TD
1-2-90	2800	mm	2.34	12	16	26.906	27.000	26.823	45°	TD
1-10-90	2840	mm	2.36	12	16	26.518	26.788	25.375	40°	TD mm
1-16-90	2865	mm	2.36	12	16	27.018	27.141	26.847	60°	mm
1-22-90	2892	mm	2.36	12	16	26.929	26.953	26.894	45°	mm
1-29-90	2908	mm	2.36	12	16	26.868	27.000	26.776	45°	TD
2-13-90	2947	mm	2.34	12	16	26.782	27.047	26.906	0°	mm
2-19-90	2955	mm	2.36	12	16	26.850	26.906	26.776	45°	mm
2-27-90	2960	mm	2.36	12	16	27.038	27.153	26.918	45°	mm
3-5-90	2994	mm	2.36	12	16	27.253	27.389	27.141	45°	mm

UNLESS OTHERWISE NOTED THE FOLLOWING DIFFRACTION CONDITIONS ARE STANDARD:
NOMINAL CAMERA LENGTH = 770 mm, HIGH TENSION = 100 KV (LAMBDA = 0.037), SPOT SIZE = 3, DIFFRACTION APERTURE = 2,
DIFFRACTION STANDARD = GOLD (d1 = 2.355 A, d2 = 2.039 A, d3 = 1.442, d4 = 1.230)
FOR SMALL SCREEN LAYER-LINE CALIBRATION, ORIENT LAYER LINES PERPENDICULAR TO DIRECTION OF MEASUREMENT, E.G. N-S.
FOR CALIBRATION OF MICROPROCESSOR-BASED ON-SCREEN MEASUREMENTS OF D-VALUES, MEASURE DIAMETER OF FIRST Au RING & DIVIDE BY 2.

RJ LEE GROUP, INC. 10366 BATTLEVIEW PARKWAY MANASSAS, VIRGINIA 22110 703-368-7880 FAX 703-368-7761

COPY

DIFFRACTION CALIBRATION LOG FOR PHILIPS CM12 TRANSMISSION ELECTRON MICROSCOPE

DATE OF DIFFRACTION PATTERN	NEGATIVE NUMBER	OPERATOR'S INITIALS	AVERAGE CAMERA CONSTANT (mm-A)	MAXIMUM CAMERA CONSTANT (mm-A)	MINIMUM CAMERA CONSTANT (mm-A)	PHI ANGLE (degrees)	ACTUAL CAMERA LENGTH (mm)	MEASURER'S INITIALS	DATE CAM.CONS. ENTERED DATABASE	REVIEWER'S INITIALS
3-6-90	3000	TVP	26.859	26.906	26.765	45°	725.913	mmm	3-6-90	
3-14-90	3046	mm	26.773	27.506	26.494	135	723.606	mmm	3-26-90	
3-19-90	3065	mm	26.965	27.094	26.594	45	728.777	mm	3-26-90	
3-26-90	3091	mm	26.388	26.435	26.246	45	713.183	mm	4-10-90	
3-26-90	3092	mm	26.402	26.482	26.341	45	717.58	mm	4-10-90	
4-2-90	3105	mm	26.838	26.859	26.800	45	725.356	mm	4-10-90	
4-9-90	3115	mm	26.735	26.835	26.659	45	722.571	mm	5-8-90	
4-16-90	3128	mm	26.559	27.930	25.316	45	717.798	mm	5-8-90	
4-23-90	3133	mm	26.773	26.965	26.564	45	723.606	mm	5-8-90	
4-30-90	3140	mm	26.667	26.788	26.553	45	720.141	mm	5-8-90	
5-7-90	3153	mm	27.156	27.306	27.024	45	733.948	mm	6-18-90	
5-14-90	3168	mm	26.750	26.847	26.600	45	722.969	mm	6-18-90	
5-21-90	3185	mm	27.097	27.259	26.906	45	732.357	mm	6-18-90	
5-29-90	3194	mm	27.292	27.389	27.200	45	737.668	mm	6-18-90	
6-4-90	3203	mm	26.906	27.318	27.035	45	727.186	mm	6-18-90	
6-15-90	3232	mm	26.988	27.071	26.918	45	729.444	mm	6-18-90	
6-18-90	3237	mm	26.685	26.906	26.494	45	721.29	mm	6-18-90	

UNLESS OTHERWISE NOTED THE FOLLOWING DIFFRACTION CONDITIONS ARE STANDARD:
NOMINAL CAMERA LENGTH = 770 mm, HIGH TENSION = 100 KV (LAMBDA = 0.037), SPOT SIZE = 3, DIFFRACTION APERTURE = 2,
DIFFRACTION STANDARD = GOLD (d1 = 2.355 A, d2 = 2.039 A, d3 = 1.442, d4 = 1.230)

COPY

X-RAY PEAK ENERGY AND RESOLUTION CALIBRATION LOG

EDAX 9800+ ENERGY DISPERSIVE X-RAY SPECTROMETER ON PHILIPS CM12 TRANSMISSION ELECTRON MICROSCOPE

DATE OF CALIBRATION	SPECTRUM DISK/FILE NUMBER	OPERATOR'S INITIALS	ROOM TEMPERATURE (degrees centigrade)	CALIBRATION ENERGIES (kev) LOW	CALIBRATION ENERGIES (kev) HIGH	ENERGY DIFFERENCES (observed-expected, kev) LOW	ENERGY DIFFERENCES (observed-expected, kev) HIGH	GAIN VALUE	ZERO VALUE	RESOLUTION Mn K ALPHA FWHM (ev)
10-19-89		mm	25	1.486	8.040	0.001	0.000	-215	53	169.7
11-3-89		mm	24	1.486	8.040	0.000	-0.001	-240	-493	185.8
11-9-89		mm	25	1.486	8.040	0.001	0.000	-211	-211	173.0
12-11-89		D/mm	24.5	1.486	8.040	<0.01	<0.01	-250	0	—
12-18-89	C/C12189	D/mm	25.0	1.486	8.04	<0.01	<0.01			154.3
12/18/89	M12189	D/mmm/CL	25.0	5.894	pure MnO2 std used for direct resolution check					156
12-27-89	C12279	mm/CL	26.0	1.486	8.040	0.000	0.001	-289	2	164.3
1-2-90	C01020	mmm	24.5	1.486	8.040	0.001	0.001	-274	74	161.9
1-10-90	C01100	mm	25.5	1.486	8.040	0.000	-0.000	-282	27	159.8
1-18-90	C01180	D	25.5	1.486	8.040	0.000	0.000	-287	43	159.4
1-22-90	C01220	mm	25.5	1.486	8.040	0.001	0.000	-280	58	161.8
1-29-90	C01290	mm	24.0	1.486	8.040	0.001	0.000	-264	131	160.0
1-30-90	M01300	D	25.0	5.894	pure MnO2 std.		—	—	—	158.0
2-13-90	C02130	mm	25.0	1.486	8.040	-0.000	0.001	-265	46	160.3
2-19-90	C02190	mm	24.0	1.486	8.040	0.000	-0.001	-282	-5	159.9
2-27-90	C02270	mm	23.5	1.486	8.040	0.001	0.001	-225	142	161.4
3-5-90	C03050	mm	22.0	1.486	8.040	-0.000	-0.000	-228	108	162.8
3-19-90	C03190	mm	23.5	1.486	8.040	0.001	-0.000	-218	113	163.6
3-26-90	C03260	mm	25.5	1.486	8.040	0.000	-0.001	-234	88	156.4
4-2-90	C04020	mm	26.0	1.486	8.040	0.001	0.000	-288	24	164.7
4-9-90	C04090	mm	25.5	1.486	8.040	0.001	0.000	-250	108	163.3
4-16-90	C04160	mm	25.0	1.486	8.040	-0.000	-0.000	-252	23	164.8

UNLESS OTHERWISE NOTED THE FOLLOWING ENERGY DISPERSIVE X-RAY ANALYSIS CONDITIONS ARE STANDARD:
NOMINAL MAGNIFICATION = 19,500 (SA MODE), HIGH TENSION = 100 KV, BEAM CURRENT = 15-20 uA, SPOT SIZE = 7, TILT = 25 DEG., ACQUISITION TIME = 100 LIVE SEC, COUNT RATE = 1000 CPS, CALIBRATION PEAKS = Al K ALPHA (1.486 KEV) & Cu K ALPHA (8.040 KEV), CALIBRATION STANDARD = Al DIFFRACTION STANDARD (Al THIN FILM ON COPPER GRID).

RJ LEE GROUP, INC. 10366 BATTLEVIEW PARKWAY MANASSAS, VIRGINIA 22110 703-368-7880 FAX 703-368-7761

COPY

X-RAY PEAK ENERGY AND RESOLUTION CALIBRATION LOG

JR EDAX 9800+ ENERGY DISPERSIVE X-RAY SPECTROMETER ON PHILIPS CM12 TRANSMISSION ELECTRON MICROSCOPE

DATE OF CALIBRATION	SPECTRUM DISK/FILE NUMBER	OPERATOR'S INITIALS	ROOM TEMPERATURE (degrees centigrade)	CALIBRATION ENERGIES (kev) LOW	CALIBRATION ENERGIES (kev) HIGH	ENERGY DIFFERENCES (observed-expected,kev) LOW	ENERGY DIFFERENCES (observed-expected,kev) HIGH	GAIN VALUE	ZERO VALUE	RESOLUTION Mn K ALPHA FWHM (ev)
4-23-90	C04230	mm	26.0	1.486	8.040	0.000	-0.001	-274	69	162.2
4-30-90	C04300	mm	26.0	1.486	8.040	-0.000	0.001	-249	41	161.2
5-7-90	C05070	mm	25.0	1.486	8.040	-0.000	0.001	-254	3	161.4
5-14-90	C05140	mm	26.5	1.486	8.040	0.001	-0.001	-283	15	167.2
5-21-90	C05210	mm	26.0	1.486	8.040	0.000	0.000	-267	-4	162.5
5-29-90	C05290	mm	25.0	1.486	8.040	0.000	-0.000	-262	-19	161.9
6-4-90	C06040	mm	25.5	1.486	8.040	0.001	-0.001	-244	19	167.0
6-15-90	C06150	mm	26	1.486	8.040	0.001	0.001	-262	-58	163.9
6-18-90	C06180	mm	25.5	1.486	8.040	-0.000	-0.000	-259	-68	165.1

UNLESS OTHERWISE NOTED THE FOLLOWING ENERGY DISPERSIVE X-RAY ANALYSIS CONDITIONS ARE STANDARD:
NOMINAL MAGNIFICATION = 19,500 (SA MODE), HIGH TENSION = 100 KV, BEAM CURRENT = 15-20 uA, SPOT SIZE = 7, TILT = 25 DEG., ACQUISITION TIME = 100 LIVE SEC, COUNT RATE = 1000 CPS, CALIBRATION PEAKS = Al K ALPHA (1.486 KEV) & Cu K ALPHA (8.040 KEV), CALIBRATION STANDARD = Al DIFFRACTION STANDARD (Al THIN FILM ON COPPER GRID).

RJ LEE GROUP, INC. 10366 BATTLEVIEW PARKWAY MANASSAS, VIRGINIA 22110 703-368-7880 FAX 703-368-7761

COPY

USER LOG FOR PHILIPS CM 12 TRANSMISSION ELECTRON MICROSCOPE

DATE	ANALYST	BEAM TIME (HOURS)	COMMENTS
5-15	mm	5	alignment, analysis RDH 911124-33, 34, ATW005036
/	/	/	ATW005037
5-16	mm	6	alignment, analysis RDH911124-34, changed
/	/	/	filament, filament adjustment, alignment
5-17	mm	5.5	alignment, analysis RDH 911124-34
/	/	/	filled EDAX with liquid nitrogen
5-18	mm	3	alignment, analysis RDH 911124-34
5-20	TWD	4	alignment, ~~analysis~~ ATW 005041
5-21	mm	5	filled EDAX with liquid nitrogen, EDAX calibration
/	/	/	Au standard photo, mag calibration photo,
/	/	/	restocked film, alignment, analysis RDH911124-33
5-22	CJL	3	alignment, analysis RDH 911124-34
5-23	mm	4	alignment, QC analysis
5-24	mm	5	alignment, QC analysis, ATW005046, nitrogen
5-25	mm	2	alignment, analysis ATW005048
5-27	CJL	2	alignment, analysis ATW005049
/	/	/	filled EDAX with liquid nitrogen
5-28	CJL	3.5	alignment, analysis ATW 005050
5-29	TWD	1	fibrous amph study
5-29	mm	4	alignment, analysis ATW005048, Au standard
/	/	/	photo, EDAX calibration, mag calibration
/	/	/	analysis ATW005040
5-30	mm		alignment, analysis ATW005040, ATW005053
5-30	CJL	1	Fibrous Amph study, filled EDAX W/liq. nitrogen
5-30	mm	6	alignment, analysis ATW005040, ATW005056

COPY

USER LOG FOR PHILIPS CM 12 TRANSMISSION ELECTRON MICROSCOPE

DATE	ANALYST	BEAM TIME (HOURS)	COMMENTS
6-3	mm	3.5	alignment, analysis ATW006003
6-3	mm	4	alignment, analysis ATW006004
6-4	mm	5	alignment, Au standard photo, mag calibration
/	/	/	photo, EDAX calibration, filled EDAX with
			liquid nitrogen, analysis ATW006005 FL=21
6-9	TD	3	LN_2, alignment, EDS calib, analysis ATW006016
6-11	mm	2	analysis ATW006015
6-12	mm	5	alignment, analysis ATW006020, 23, 25
6-12	TD	3	ATW006024 - analysis, align. ATW-006023
6-13	mm	4	alignment, analysis ATW006021
6-13	CJL	2	QC analysis ATW005
6-14	mm	4	alignment, analysis ATW006017, ATW006032, LN_2
6-14	CJL	1	analysis ATW006032
6-14	TD	3	ATW006022, bulks - brake shoes, alignment
6-15	mm	5	EDAX calibration, Au std photo, mag calibration,
/	/	/	alignment, analysis ATW005040, filament replaced
/	/	/	analysis ATW006017
6/16	CJL	5	alignment, analysis ATW006040, Edax Filled with liq. N
/	/	/	analysis ATW006039
6-17	mm	2.5	alignment analysis ATW006031, developed film
6-18	mm	6	alignment, EDAX calibration, Au std photo, mag
/	/	/	calibration, filled EDAX w/ liquid nitrogen, ATW006033
/	/	/	analysis ATW006017, ATW006031, developed film
6-18	CJL		QC Analysis ATW005
6-20	mm		alignment, analysis - ATW006043

COPY

PHOTOGRAPHIC DATA LOG FOR PHILIPS CM 12 TEM

DATE	PLATE NUMBER	EXPO. TIME (SEC)	MAG (X1000) OR CAM. LENGTH	KV	OPERATOR INITIALS	SAMPLE NUMBER	GRID/FIELD/FIBER	REMARKS
5-16	3176	10	770	100	mm	17424HT	1-1-2	RDH 911124-34 SAED chrysotile
5-17	3177	10	770	100	mm	17425HT	1-5-1	
	3178	10	770	100	mm	17426HT	1-1-3	
	3179	10	770	100	mm	17427HT	1-1-1	
	3180	10	770	100	mm	17428HT	7-1-1	
	3181	10	770	100	mm	17429HT	2-8-1	
5-18	3182	1	770	100	mm	17430HT	1-1-1	
	3183	10	770	100	mm	17430HT	1-1-1	
	3184	10	770	100	mm	17432HT	1-1-1	
5-21	3185	10	770	100	mm	—	—	Au standard
5-21	3186	2 man 2 auto	19,500	100	mm	—	—	Double exposure - waffle diffraction grating + spot size 9
5-21	3187	10	770	100	mm	17407HT	1-1-1	RDH911124-33 SAED chrysotile
	3188	10	770	100	mm	17407HT	1-1-27	
5-22	3189	10	770	100	CSL	17420	2-2-9	SAED chrysotile
5-24	3190	10	770	100	mm	57746	2-10-1	ATW005048 SAED chrysotile
5-25	3191	10	770	100	mm	57750	1-3-1	ATW005048 SAED chrysotile
5-27	3192	10	770	100	CSL	57756	1-1-3	ATW005049 SAED chrysotile
5-29	3193	10	770	100	mm	—	—	Au standard at 15,000 mag
5-29	3194	10	770	100	mm	—	—	Au standard at 19,500 mag
5-29	3195	10	19,500	100	mm	—	—	Double exposure - mag calibration + spot size
5-29	3196	10	770	100	mm	57680	1-1-1	ATW005046 SAED chrysotile
	3197	6.8 auto	6300	100	mm	52680		brightfield
	3198	2 auto	35,000	100	mm	57680		brightfield
	3199	10	770	100	mm	57680	1-6-4	SAED chrysotile
	3200			100				~~brightfield~~

COPY

RJ LeeGroup

The Materials Characterization Specialists

JUNE 21, 1990

JOHN HARRISON
NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 00837

RE: PLM Analysis for Sample as Shown on Attached Report
Job Number: AOW005040

DEAR JOHN HARRISON:

Enclosed are the results obtained from the asbestos identification for the above referenced samples. The samples were analyzed using the polarized light microscope (PLM) and dispersion staining objective in accordance with guidelines set forth in the EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples, 40 CFR, Pt. 763, Subpt. F, App. A (7-1-87 Edition).

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, RJ Lee Group will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee will be assessed for the return of any samples.

If you have any questions on this report or if I can be of further assistance, please feel free to call me.

Sincerely yours,

Tom Dagenhart

Thomas V. Dagenhart, M.S.
Lab Manager

Enclosure

TVD/dms

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RJ LeeGroup

The Materials Characterization Specialists

LABORATORY REPORT

****

NUS CORPORATION
1090 KING GEORGES POST ROAD, #1103
EDISON, NEW JERSEY 00837
201-225-6160
ATTN: JOHN HARRISON

REPORT DATE: JUNE 21, 1990
SAMPLES RECEIVED: MAY 18, 1990
RJ LEE JOB NO.: AOW005040
CLIENT JOB NO.: SAS 5632B
PURCHASE ORDER NO:

ANALYSIS: ASBESTOS IN BULK SAMPLES

METHOD: POLARIZED LIGHT MICROSCOPY/DISPERSION STAINING (PLM),
40 CFR PART 763 APP. A TO SUBPART F

SAMPLE IDENTIFICATION		CHRYSOTILE ASBESTOS (AREA %)	AMPHIBOLE ASBESTOS (AREA %)	NON-ASBESTOS FIBERS (AREA %)	HOMOGENEOUS YES/NO	PHYSICAL DESCRIPTION OF SAMPLE
CLIENT	RJ LEE					
SAS S-1	57684	ND1	ND1	5 CELLULOSE 1 FIBERGLASS	YES	RED SANDY SOIL
SAS S-2	57685	ND1	ND1	3 CELLULOSE	YES	REDDISH-ORANGE SANDY SOIL
SAS S-3	57686	ND1	ND1	7 CELLULOSE	YES	PINKISH-ORANGE ROCKY SOIL

Cathl J. Fong
LABORATORY ANALYST

Tom Dagenhart
TOM DAGENHART, M.S.
LABORATORY MANAGER, NVLAP SIGNATORY

6-21-90
DATE

NIST NVLAP Participant Number 1208-3
PLEASE SEE ESSENTIAL NOTES ON REVERSE SIDE OF REPORT

RJ LeeGroup

The Materials Characterization Specialists

PLM CALIBRATION DATA

FOR PROJECT SAS 5632B

RJ Lee Group, Inc. • 10366 Battleview Parkway • Manassas, VA 22110 • 703/368-7880 • 703/368-7761-FAX
Monroeville, PA 15146 • 412/325-1776 • 412/733-1799-FAX

RJ Lee Group

The Materials Characterization Specialists

COPY

POLARIZED LIGHT MICROSCOPY QUALITY CONTROL PRECISION DOCUMENTATION WORKSHEET

Date	Job #	Lab #	Result A (%)	Analyst A	Result B (%)	Analyst B	Control Limit	Δ	Comments QC Officer Approval
4/23	004036	57389	5% (C)	CJL	10%	CJL	6.23	5	CJL
4/23	004035	57369	Trace (C)	CJL	trace	ID	N/A	N/A	ID
4/24	004039	57401	ND1	CJL	ND1	ID	N/A	N/A	ID
4/24	004039	57411	ND1	CJL	ND1	ID	N/A	N/A	ID
5/3	005005	57457	5% C 5% An	CJL	5% An 3% C	CJL	N/A An 3.3 (C)	N/A 2 (C)	
5/3	005005	57467	Trace (C) Trace (An)	CJL	Trace (C) Trace (An)	CJL	—	—	CJL
5/4	005003	57443	ND1	CJL	ND1	CJL	—	—	CJL
5/8	005010	57486	5% (C)	CJL	8%	ID	5.4	3	ID
5/8	005015	57501	15 cellulose 40 Min Wool	CJL	10 Cellulose 40 Min wool	ID	N/A	N/A	ID
5/11/90	005019	57525	15% (C)	CJL	10% (C)	ID	10.39	5	CJL
5/11/90	005019	57535	15 cellulose 45 min wool	CJL	25 cellulose 70 min wool	ID	N/A	N/A	CJL
5/11/90	005019	57543	1% (C)	CJL	2% (C)	ID	1.24	1	CJL
5/11/90	005020	57550	Trace cellulose 75% min. wool	CJL	Trace cellulose 70% min. wool	ID	N/A	N/A	CJL
5/11/90	005020	57552	Trace cellulose	CJL	Trace cellulose	ID	N/A	N/A	CJL
5/14/90	005023	57576	25%	CJL	20%	CJL	18.698	5	CJL
5/17/90	005024	57587	35%	CJL	35%	CJL	N/A	N/A	CJL
5/17/90	005024	57597	20 cellulose 5% min. wool	CJL	20 cellulose 10 min. wool	CJL	N/A	N/A	CJL
5/22/90	005025	57609	40% cellulose	CJL	50% cellulose	ID	N/A	N/A	ID
5/22/90	005025	57619	10% (C)	CJL	15%	ID	10.39	5	ID
5/22/90	005032	57641	25% (C)	CJL	30%	ID	22.85	5	ID

C = Chrysotile
A = Amosite
CR = Crocidolite
AN = Anthophyllite
AC = Actinolite
T = Tremolite

AB = Mean Value of A + B
CV = Coefficient of Variance, 0.3 unless noted
Control Limit = 2.77 (AB) (C.V.)
Δ = |A - B|
Acceptance Criteria: Δ must be < Control Limit

COPY

LARIZED LIGHT MICROSCOPY ALIGNMENT, MAINTENANCE AND CALIBRATION WORKSHEET

Anal. Intls.	Date	Kohler Illum.	Stage Centered	Polars at ⊥	X-hairs ∥ Polars	Cleaned Optical Srfcs.	Mag. Cal. w/ 10X Ocular &		
							40X	10X	4X
CJL	5/11/90	✓	✓	✓	✓	✓			
CJL	5/15/90	✓	✓	✓	✓	✓			
CJL	5/16/90	✓	✓	✓	✓	✓			
CJL	5/17/90	✓	✓	✓	✓	✓			
CJL	5/21/90	✓	✓	✓	✓	✓			
CJL	5/23/90	✓	✓	✓	✓	✓			
CJL	5/24/90	✓	✓	✓	✓	✓			
CJL	5/27/90	✓	✓	✓	✓	✓			
CJL	5/28/90	✓	✓	✓	✓	✓			
CJL	5/29/90	✓	✓	✓	✓	✓			
CJL	5/31/90	✓	✓	✓	✓	✓			
CJL	6/1/90	✓	✓	✓	✓	✓			
CJL	6/4/90	✓	✓	✓	✓	✓			
CJL	6/5/90	✓	✓	✓	✓	✓			
CJL	6/6/90	✓	✓	✓	✓	✓			
CJL	6/7/90	✓	✓	✓	✓	✓			
CJL	6/11/90	✓	✓	✓	✓	✓			
CJL	6/13/90	✓	✓	✓	✓	✓			
CJL	6/14/90	✓	✓	✓	✓	✓			
CJL	6/18/90	✓	✓	✓	✓	✓			
CJL	6/19/90	✓	✓	✓	✓	✓			
CJL	6/21/90	✓	✓	✓	✓	✓			

COPY

POLARIZED LIGHT MICROSCOPY REFRACTIVE INDEX LIQUID CALIBRATION WORKSHEET

Analyst's Initials	Date	Nominal R.I. of Liquid	Calibration Material	Certified R.I. Value/Notes		QC Officer Approval
TVD	1-27-89	1.550	NBS chrysotile Cargille glass	1.550		TD
TVD	1-27-89	1.680	NBS amosite, Cargille glass	1.680		TD
TVD	1-27-89	1.700	NBS crocidolite Cargille glass	1.70		TD
TVD	1-27-89	1.605	Montana anthophyllite Cargille glass	1.605		TD
TVD	1-27-89	1.630	Fairfax actinolite, Cargille glass	1.63		TD
TVD	8-15-89	1.550	NBS chrysotile	1.550		TD
TVD	8-15-89	1.680	NBS amosite	1.680		TD
TVD	8-15-89	1.605	Montana anthophyllite	1.605		TD
CJL	11-15-89	1.55	NBS chrysotile	1.550		CJL, TD
CJL	11-15-89	1.68	NBS Amosite	1.680		CJL, TD
CJL	11-15-89	1.70	NBS crocidolite	1.700		CJL, TD
CJL	11-15-89	1.63	Fairfax Actinolite	1.63		CJL, TD
CJL	2-16-90	1.55	Cargille glass	1.550	70°F	CJL, TD
CJL	2-16-90	1.68	Cargille glass	1.680	70°F	CJL, TD
CJL	2-16-90	1.605	cargille glass	1.605	70°F	CJL, TD
CJL	2-23-90	1.630	Cargille glass	1.630	70°F	CJL, TD
CJL	2-23-90	1.700	cargille glass	1.700	70°F	CJL, TD
CJL	6-15-90	1.550	cargille glass	1.550	70°F	CJL
CJL	6-15-90	1.680	Cargille glass	1.680	70°F	CJL

COPY

POLARIZED LIGHT MICROSCOPY QUALITY CONTROL ACCURACY DOCUMENTATION WORKSHEET

Analyst's Name: Cathi Lowery

Anal.'s Intls.	Date	Results	Actual Sample Composition	Misidentification	False Positive	False Negative	% Bias	QC Officer Approval
CJL	1/15	100% Chrysotile	100% chrysotile	—	—	—	—	ID
CJL	2/5	79% Anthophyllite	100% anthophyllite asbestos	—	—	—	—	ID
CJL	2/13	79% Chrysotile	100% chrysotile	—	—	—	—	ID
CJL	3/15	ND I (Kevlar)	100% Kevlar	—	—	—	—	ID
~~CJL~~ D	3/23/90	100% Anthophyllite	100% Anthophyllite ~~Tremolite~~	—	—	—	—	CJL
CJL	3/23/90	100% crocidolite	100% Crocidolite	—	—	—	—	ID
CJL	3/9/90	NDI Picrolite	100% F.B. w/ Antigorite (Picrolite)	—	—	—	—	ID
CJL	3/26/90	NDI	100% semilabyite	—	—	—	—	ID
CJL	4/24/90	100% chrys.	100% chrysotile	—	—	—	—	ID
CJL	4/24/90	100% Anthophyllite	100% anthophyllite	—	—	—	—	ID
AD	4/24/90	100% actinolite	100% Actinolite	—	—	—	—	CJL
CJL	5/8/90	79% (NDI) malachite	100% Malachite	—	—	—	—	ID
CJL	5/11/90	100% crocidolite	100% crocidolite	—	—	—	—	ID

Total False Positives: _____ Average % Bias: _____

Total False Negatives: _____ Total Asbestos Misidentifications: _____

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 6-15-90
RJL QC #: WQ 005040
RJL JOB #: ATW 005040

SAMPLE #: 57682
CLIENT NAME: Nus Corp.
CLIENT SAMPLE #: SAS GW-4
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
PHAHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 20
ASBESTOS <5: Ø
NON-ASBESTOS <5: 8
AMBIGUIOUS <5: Ø
ASBESTOS >5: 1
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	1	4.1	.5	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		N
	2	13.5	.05	AMP	CHR	NAS	AMB	UNK	B C M 2	Si,	576822		3235
2	3	1.0	.04	AMP	CHR	NAS	AMB	UNK	B C M 2	Si Al	✓		✓
3	4	4.2	.2	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		N
4	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
5	5	4.7	.15	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		✓
	6	1.9	.2	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		✓
6	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	7	4.9	.2	AMP	CHR	NAS	AMB	UNK	B C M	Ti	✓		✓
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
11	8	4.1	.3	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		✓
12	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
13	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
14	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
15	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
16	9	4.0	.5	AMP	CHR	NAS	AMB	UNK	B C M 1	Ti	✓		✓
17	NSD			AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:
~~[illegible]~~
heavy particulate loading

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 1ml/80 ml (70 ml H_2O, 10 ml HCl)
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: _____
RJL QC #: WQ005040
RJL JOB #: AAW005040

SAMPLE #: 57682
CLIENT NAME: NUS Corp.
CLIENT SAMPLE #: SAS GW-4
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
CHAMBERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: _____
GRID BOX #: 217

GRID OPENINGS: _____
ASBESTOS <5: _____
NON-ASBESTOS <5: _____
AMBIGUIOUS <5: _____
ASBESTOS >5: _____
NON-ASBESTOS >5: _____
AMBIGUIOUS >5: _____

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
18	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
19	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
20	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

PREP: DIRECT____ INDIRECT ✓ OTHER____
DILUTION: _____
FILTER TYPE: MCE ✓ PC____ OTHER____
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 6-15-96
RJL QC #: WQ005040
RJL JOB #: AMW005040

SAMPLE #: 57683
IENT NAME: NUS Corp.
LIENT SAMPLE #: SAS GW-5
IR VOLUME(LITERS)
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
ATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 20
ASBESTOS <5: 1
NON-ASBESTOS <5: Ø
AMBIGUIOUS <5: 1
ASBESTOS >5: Ø
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	1	1.8	.01	AMP	CHR	NAS	AMB	UNK	B C M 1	Si Mg	576831		✓ faded
2	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
3	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
4	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
6	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
11	2	4.5	.03	AMP	CHR	NAS	AMB	UNK	B C M 1	Si Mg Fe	✓		N
12	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
13	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
14	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
15	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
16	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
17	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
18	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
19	NSD			AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

Moderate particulate loading

PREP: DIRECT___ INDIRECT ✓ OTHER___
DILUTION: 2ml
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: _____
RJL QC #: WQ005040
RJL JOB #: ATW005040

SAMPLE #: 57683
IENT NAME: NUS Corp.
LIENT SAMPLE #: SAS GW-5
IR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
ATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: _____
GRID BOX #: 217

GRID OPENINGS: _____
ASBESTOS <5: _____
NON-ASBESTOS <5: _____
AMBIGUIOUS <5: _____
ASBESTOS >5: _____
NON-ASBESTOS >5: _____
AMBIGUIOUS >5: _____

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
20	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

PREP: DIRECT____ INDIRECT ✓ OTHER____
DILUTION: _____
FILTER TYPE: MCE ✓ PC____ OTHER____
GRID OPENINGS REQUIRED: 20
GRID OPENING AREA(MM2): .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 6-15-98
RJL QC #: WQ 005040
RJL JOB #: ATW 005040

SAMPLE #: Filter Blank
CLIENT NAME: NUS Corp
CLIENT SAMPLE #:
AIR VOLUME(LITERS)
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: cm-12
MAGNIFICATION: 19,500
OPERATOR: MM
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 10
ASBESTOS <5: Ø
NON-ASBESTOS <5: Ø
AMBIGUIOUS <5: Ø
ASBESTOS >5: Ø
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
2	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
3	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
4	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
6	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

Very light particulate loading

PREP: DIRECT ✓ INDIRECT___ OTHER___
DILUTION:
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 10
GRID OPENING AREA(MM2) .006764

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 6-15-96
RJL QC #: WQ 005040
RJL JOB #: ATW 005040

SAMPLE #: Water Blank
CLIENT NAME: NUS Corp
CLIENT SAMPLE #:
AIR VOLUME(LITERS)
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 217

GRID OPENINGS: 10
ASBESTOS <5: Ø
NON-ASBESTOS <5: 1
AMBIGUIOUS <5: Ø
ASBESTOS >5: Ø
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
2	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
3	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
4	1	.9	.04	AMP	CHR	NAS	AMB	UNK	B C M	Si Mg Fe	✓		N
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
6	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

Very light particulate loading

PREP: DIRECT ✓ INDIRECT___ OTHER___
DILUTION:
FILTER TYPE: MCE ✓ PC___ OTHER___
GRID OPENINGS REQUIRED: 10
GRID OPENING AREA(MM2) .006704

RJ LEE GROUP, INC
TEM COUNT SHEET

DATE: 6-18-90
RJL QC #: WQ 666017
RJL JOB #: ATW 006 017

RJL SAMPLE #: HCl Blank
CLIENT NAME: NLS Corp
CLIENT SAMPLE #: —
AIR VOLUME(LITERS) —
ANALYSIS TYPE:
AHERA___ LEVEL I___ LEVEL II ✓
MATRIX TYPE:
AIR___ WATER ✓ DUST___ OTHER___
BULK FIELD OF VIEW___

MICROSCOPE: CM-12
MAGNIFICATION: 19,500
OPERATOR: mm
EDS DISK: 1
GRID BOX #: 222

GRID OPENINGS: 10
ASBESTOS <5: Ø
NON-ASBESTOS <5: Ø
AMBIGUIOUS <5: Ø
ASBESTOS >5: Ø
NON-ASBESTOS >5: Ø
AMBIGUIOUS >5: Ø

FIELD	FIBER	LENGTH	WIDTH	IDENTIFICATION					MORPH.	EDS	FILE#	BF	SAED
1	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
2	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
3	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
4	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
5	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
6	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
7	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
8	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
9	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
10	NSD			AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				
				AMP	CHR	NAS	AMB	UNK	B C M				

COMMENTS:

Very light particulate loading

PREP: DIRECT ✓ INDIRECT____ OTHER____
DILUTION: 2ml aliquot
FILTER TYPE: MCE ✓ PC____ OTHER____
GRID OPENINGS REQUIRED: 10
GRID OPENING AREA(MM2) 006704

02-9001-10-SI
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
CELOTEX (A)
PERTH AMBOY, NEW JERSEY
VOLUME 3 OF 3

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9001-10
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 14, 1990

NUS CORPORATION
SUPERFUND DIVISION

REFERENCE NO. 10

To: Buddy 6-21-90

REVISED. DISPOSE OF PREVIOUS COPIES

EPA HEALTH ADVISORIES

CHEMICAL	1 DAY ug/l	10 DAY ug/l	LONGER TERM ug/l	DWEL / LTHA ug/l	10-5 CANCER RISK ESTIMATE ug/l	MCL/PMCL MCLG/PMCLG ug/l	RfD ug/kg/day
acrylamide	1,500	300	20	7 / -	0.1 B2		0.2
alachlor	(100)	100	-	350 / -	4.4 B		10
aldicarb	40/10	(40/10)	10	40 / 10	- E	PMCLG 9	1.25
aldicarb SULFONE ONLY	60	(60)	210/60	420 / 42	- E		6
arsenic	-	-	-	- / -	- A	MCL 50	
asbestos in million fibers/liter SEPTEMBER 1985 VALUES						PMCLG 7.1	
barium	-	-	-	1,800 / 1,500	- D	MCL 1,000	51
						PMCLG 1,500	
benzene	(235)	235	-	- / -	7 A	MCL 5	
cadmium	43	(43)	18/5	18 / 5	- B1/D	MCL 10	0.5
						PMCLG 5	
carbofuran	50	(50)	180/50	190 / 36	- E	PMCLG 36	5
carbon tetrachloride	4,000	160	250/71	25 / -	2.7 B2	MCL 5	0.7
chlordane	(63)	63	-	2 / -	0.27 B2		0.05
chlorobenzene	(4,300)	(4,300)	15,000/ 4,300	1,510 / 300	- D	PMCLG 60	43
chloroform SEE TOTAL THM	-	-	-	350 / -	60 B2		
chromium	(1,400)	1,400	840/240	170 / 120	- A/D	MCL 50	4.8
						PMCLG 120	
copper	-	-	-	- / -		PMCLG 1,300	
cyanide	(220)	(220)	770/(220)	770 / 154	- D		22
1,2-dibromo-3-chloropropane (DBCP)	200	50	-	- / -	0.25 B2		
2,4-dichlorophenoxy-acetic acid	1,100	300		350 / 70	- D	MCL 100	10
o- and m-dichlorobenzene	(9,930)	(8,930)	31,250/ 8,930	3,125 / 620	- D	PMCLG 620	89
META BASED ON ORTHO DATA						ORTHO ONLY	
p-dichlorobenzene	(10,700)	(10,700)	37,500/ 10,700	3,750 / 75	- C	MCL 75	100
1,2-dichloroethane	(740)	(740)	2,600/ 740	- / -	3.8 B2	MCL 5	
1,1-dichloroethene	2,000	(1,000)	3,500/ 1,000	350 / 7	- C	MCL 7	10
cis-1,2-dichloroethene	4,000	(1,000)	3,500/ 1,000	350 / 70	- D	PMCLG 70	10
trans-1,2-dichloroethene	20,000	(1,430)	5,000/ 1,430	350 / 70	- D	PMCLG 70	10
dichloromethane	13,300	1,500	-	1,750 / -	48 B2		50
1,2-dichloropropane	-	90	-	- / -	5.6 B2		
p-dioxane	1,120	(412)	-	- / -	70 B2		
dioxin (2,3,7,8-tetrachloro-dibenzo-p-dioxin)	0.001	(0.0001)	3.5 e-5/ 1.0 e-5	3.5 e-5/ -	2.2 e-6 B2		1.0 e-6
endrin	20	5	16/4.5	1.6/ -	- E	MCL 0.2	0.045
epichlorohydrin	(140)	140	(70)	70 / -	35.4 B2		2
ethylbenzene	32,000	(3,200)	(970)	3,400 / 680	- D	PMCLG 680	97

LTHA Lifetime HA = 0.2 X DWEL (organics) or 0.1 X DWEL (inorganics). DWEL given for class A and B carcinogens (inconsistent) water.

DWEL Drinking Water Equivalent Level - lifetime ingestion, noncarcinogenic endpoint. Assumes 100 % exposure from drinking

A Human carcinogen

B2 Probable human carcinogen. Sufficient animal evidence, inadequate human evidence.

C Possible human carcinogen. Limited animal evidence, absence of human data. LTHA obtained by dividing by additional 10

D Inadequate data to evaluate carcinogenicity.

E No evidence of carcinogenicity in humans.

NOTE: Numbers written as AB/CD indicate values for 70 kg adult and 10 kg child respectively.

NOTE: MCL, PMCL, MCLG, and PMCLG are: Maximum Contaminant Levels (MCL), Proposed MCL, MCL Goal, and Proposed MCL Goal, respectively.

( ) Indicate numbers derived from other Health Advisory values.

This is a summary table of information published by the EPA Office of Drinking Water, Criteria and Standards Division, March 31, 1987, and the National Primary Drinking Water Regulations.

REFERENCE NO. 11

CONTAMINATED WASTE SITES, PROPERTY AND YOUR HEALTH

- Drinking Water
- Ambient Water
- Air
- Soil/Sediment/Sludge
- Food

William L. Lappenbusch, Ph.D.
Toxicologist, Environmental Health Scientist
Vice President, Scientific Affairs

Lappenbusch Environmental Health, Inc.
6480 Overlook Drive
Alexandria, Virginia 22312
703-941-5997

4. Asbestos

Asbestos is a multitude of non-essential elements. The daily intake from all sources is unknown. However, it is assumed that drinking water is responsible for the intake of 10^7 fibers/person/day (NAS 83). The toxicity of asbestos may include gastrointestinal irritation and cancer, pleural and peritoneal mesothelioma (La 86). Several epidemiological studies have been conducted. It has been suggested that the long, thin fibers are the most effective inducers of mesotheliomas, the most carcinogenic fibers apparently being those with diameters less than 0.05 um and lengths greater than 3 um (NAS 83). The NAS (83) calculated oral excess cancer risk rates for drinking water of 10^{-5} for 0.11×10^6 TEM fibers/liter (men) and 0.17×10^6 TEM fibers/liter (women) assuming the consumption of two liters of water per day over a 70 year period.

5. Barium

Barium is a non-essential element. Soils in the eastern U.S. have concentrations of 300-500 ppm while isolated geologic formations in the West and Midwest have Barium concentrations that are 1000 times higher (EPA 85). Barium air concentrations range from 0.0015-0.95 ug/m3, food concentration averages 900 ug/day, and 80-86 ug Ba/day comes from drinking water (EPA 85, La 86). This would suggest that drinking water accounts for approximately 10% of ones daily intake and is close to the 11% calculated by Lappenbusch (La 86). In 1987, however, EPA utilized a relative source contribution (RSC) factor of 83% for drinking water rather than 10% which appears to be inconsistent with the data.

The gastrointestinal absorption rate is 5% (EPA 87). Barium is distributed primarily to the bone. Most Ba that is orally consumed is excreted in the feces (ICRP 75).

Environmental levels of Ba may or may not cause an elevated blood pressure. A study by Perry (83) would suggest that it does while a study by Brenniman (81) disagrees. Utilizing the 16 month animal study by Perry (83), a NOAEL of 0.051 mg/kg appeared appropriate and the LOAEL of 0.51 mg/kg demonstrated a significant increase in blood pressure. However, since Brenniman's study (81) showed no signs of elevated blood pressure, EPA (87)

REFERENCE NO. 12

STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

INDUSTRIAL PRETREATMENT INSPECTION REPORT

I. TYPE OF INSPECTION DATE OF INSPECTION: April 29th, 86

A. ✓ NJPDES B. ___ BMR Verification C. ___ Categorical Determination
D. ___ Other: _____

II. GENERAL INFORMATION

A. Facility Name: THE CELOTEX CORPORATION

B. Parent Company or Affiliation: CELOTEX CORP., TEMPA-FL.

C. Facility Mailing Address:
HERBERTS & MARKET STREETS.
PERTH AMBOY, N.J.-08862.

D. Facility Street Address:
- Same as C -

E. Year present operations began at this facility: Since 1946.

F. Authorized Representative: MR. D. T. SHIRLEY
Title or Position: V.P. MANUFACTURING.

G. Facility Contact: MR. J. W. TRONTELL
Title or Position: PLANT ENGINEER.
Telephone No.: 201-826-6881.

H. Facility Personnel Present at Inspection: MR. TRONTELL, Pl. Engr.
Mr. Edward Reddy Project Engr.

III. PRODUCT OR SERVICE INFORMATION

A. Narrative description of the primary manufacturing or service activity at the facility (Note if Batch, Continuous, Seasonal):
8 hrs 5 days a week operation for roofing product.
Paper mill & organic asphalt operation closed down since Nov/85.

B. Principal Raw Materials Used: Mixed paper, wood chips & chpts.

C. Principal Products Produced: Organic asphalt & asphalt roofing products.

D. List all additional activities and specific processes occurring at this facility (e.g. Electroplating/Metal Finishing: identify specific processes, Laboratory, Research, etc.): Small Q.C. lab.

E. For BMR Verification Inspection - Does this accurately compare to the information submitted on the BMR? ___Yes ___No ✓N/A
Comments:

IV. WATER SOURCES AND USE

A. Raw Water Sources
✓ Public Water Supply: Specify Perth Amboy City Water Works.
___ Private Well(s)
___ Surface Water: Specify

B. Are raw water sources metered or are other means available for flow measurement? Specify: Metered

C. Describe any water treatment or conditioning processes utilized: None

D. Average Daily Water Use (Specify source of data): 75049 gpd (for the month of April 86: water Bill)

E. Has the company provided a water flow schematic? ✓Yes ___No
Attach sketch, if necessary.

F. Has the company provided a schematic process diagram? ✓Yes ___No
Attach sketch, if necessary.

G. For BMR Verification Inspections - Does schematic process diagram submitted with the BMR adequately represent the actual facility?
___Yes ___No If No, list deficiencies: N/A.

V. ENVIRONMENTAL CONTROL PERMITS/REGISTRATIONS HELD

A. Is facility connected to a POTW (i.e. public sewer)? ✓Yes ___No ___Proposed
POTW: Perth Amboy STP POTW NJPDES No.: NJ 0023213.

B. Facility held permits/registrations
___NJPDES: Specify type ___ and Permit Number NJ ___
✓Air Pollution: Site I.D. Number 15 Permits Not included
___RCRA (___Generator ___Storage(> 90 days) ___Treatment):ID No. NJD ___
✓Other: Specify Monitoring wells for Landfill.
___None

VI. AIR POLLUTION RELATED

A. Are there any process tanks greater than 100 gallons? ✓ Yes ___ No

B. Are there any heated surface cleaners (e.g. vapor degreasers, etc.)? ___ Yes ✓ No

C. Does this facility have any exhaust system in conjunction with their process operations (e.g. from plating tanks, painting rooms, vapor degreasers, etc.)? ✓ Yes ___ No
If yes, is the system registered? ✓ Yes ___ No
Describe: Dust collector ~~Scrubbers~~ & exhaust system, Smog Hog

D. Are there any air pollution control devices? ✓ Yes ___ No
Describe: Dust collector, scrubber & exhaust system Smog Hog.
15 Permits for air pollution (list ~~available~~ included)

VII. WASTEWATER INFORMATION

A. Discharge Method
(1) ✓ public sewer
(2) ✓ surface water
(3) ___ storm drain
(4) ✓ ground discharge-type: For Landfill
(5) ✓ waste hauler

Source of Wastewater
(1) Industrial process wastewater
(2) Rain & storm water to surface
(3) Flue waste, reject shingles &
(4) roofing products, Paper Mill waste,
(5) Debris

B. Applicable Standards
___ Categorical Standards (List applicable subparts):
___ State:
___ Local: Ordinance of the CITY OF PERTH AMBOY.

C. Representative Sampling Point
(1) Describe sampling point(s) (if any) utilized by the facility. If none used, is a sampling point available? Describe: Sample is collected at the discharge from the pump, after wastewater goes through screening & clarifier.

(2) Are the sampling point(s) utilized representative of the operations they are intended to monitor? ✓ Yes ___ No If No, list deficiencies:

(3) Are regulated process streams metered or are other means available for flow measurement? Specify: Estimated High volume of water is lost in evaporation ~~[illegible]~~ (during drying process)

List Quantity of process wastewater discharged: 72 950 gpd
(For the period 5/85 - 11/85)

(4) If necessary, is sufficient flow data obtainable to allow use of the combined wastestream formula? ___Yes ___No ✓N/A

Comments: –

(5) Is a certified lab used for all official analyses? ✓Yes ___No ___N/A
Lab name and location: ROSSNAGEL & ASSOCIATES INC., 234 Route 70, Medford N.J. - 08055.

Comments: –

VIII. PRETREATMENT FACILITIES

A. Is any treatment performed on the wastewater prior to discharge to the public sewer? ✓Yes ___No

Describe/Comments: Screening and Clarifiers.

B. Is any treatment proposed to be utilized on the wastewater prior to discharge to the public sewer? ___Yes ✓No ___N/A

Comments: –

C. Is this facility operating under a compliance schedule to install treatment or otherwise attain compliance with applicable standards? ___Yes ✓No ___N/A If No, is facility in compliance? ___Yes ✓No

Comments: High BOD & TSS by-t Discharge has been reduced to less than half as Company has closed down half of its operation.

D. Does this facility generate any sludge or other residuals as a result of its pretreatment operations? ___Yes ✓No ___N/A

Comments: In very small quantity, some tape pieces were screened out.

How is this sludge disposed of? –

E. Licensed Operator

(1) NJPDES Permit: ___Issued ___Applic. Requested ___Applic. Submitted ___Not Required

Is treatment performed or proposed (see A and B above)? ✓Yes ___No

(2) Does this facility require a licensed operator?
✓Yes: Classification N-2 ___No

Name of licensed operator, if any: _____

IX. WASTE

A. Does this facility generate any waste process materials (spent solvents, spent acids, etc.)? ✓ Yes ___ No

If Yes, Describe: Solid process waste: Repair from roofing, felts, Paper mill process, floor wastes & Debris.

Quantity generated per month: About 300 tons per month.

How stored: In a pit out side processing unit which is also truck pick-up stop.

How disposed: To the landfill. hauled by METRO DISPOSAL Co., P.O. Box 205, KEASBEY N.J. - 08832.

B. Does this facility generate any residuals as a result of its operations?

___ Yes ___ No

If Yes, Describe: - See Part A -

Quantity generated per month:

How stored:

How disposed:

C. Does this facility have a designated or centralized area(s) for the storage of hazardous waste? ___ Yes ___ No ___ N/A (No hazardous waste generated)

Comments: Emulsion/water mixes is stored in 200 drums which they are recycling & products are used in asphalt processing. Storage area does not has shade but is away from any drainage.

X. TOXIC ORGANICS MANAGEMENT

A. Are categorical organics used on site? ___ Yes ✓ No

Type	How Much	How Used

Has the facility chosen the TTO Plan option? ___ Yes ___ No ___ N/A

If yes, has a TTO Management Plan been submitted for approval? ___ Yes ___ No

Are other non-categorical organics used on-site in more than laboratory quantities? ___ Yes ✓ No

Type	How Much	How Used

B. Storage

(1) Are the raw organics stored in an area appropriately safeguarded against spills reaching the sewer: ___Yes ___No

Comments: N/A.

(2) Are the spent organics stored in an area appropriately safeguarded against spills reaching the sewer? ___Yes ___No ___N/A

Comments: N/A.

C. Handling Procedures

(1) Have adequate handling procedures been developed to prevent organics used during process operations from reaching the sewer in amounts exceeding federal standards? ___Yes ___No ___N/A (No federal standard)

(2) Are personnel actively implementing these procedures? ___Yes ___No ___Not observed

Comments: N/A.

D. How are the organics used on site disposed of? N/A.

If licensed hauler used, which one? _____

XI. COMMENTS AND OBSERVATIONS NOTED DURING THE INSPECTION

- Company has closed-down their paper mill operation, which was more than half of their total operation, on 11/15/85. and Company is not expecting to reopen it because of change in technology & product demand. (fiberglass is replacing asphalt)

- 100,000 gallons holding tanks for the recycle/reuse of water but not operating/using them since 11/15/85. Bad Bad

- About 200 barrels of "Emulsion + water" waste (May be Hazardous or may be not) stored and 3 to 4 of them are recycled daily. products from recycling are reused in asphalt roofing process.

- Some waste oil/lubricant found in by holding trays in boiler & machine room. Mr. Trontell does not know source & how they dispose

- Large quantity of water is lost by evaporation in the roofing product operation during quenching & drying process

- Since the application was submitted in July 1984, Water consumption and discharge to POTW have been drastically changed because of closing of half of their operation. Mr. Trontell does not has complete & updated data since 11/15/85 (closing date) and updated data will submitted to us in June during the reporting frequency/flow to POTW (Perth Amboy)

(CONTINUE)

XI. COMMENTS AND OBSERVATIONS NOTED DURING THE INSPECTION

- Decrease in water use & wastewater discharge:

(i) 240,000 gpd water discharged to POTW during 1983.

(ii) 106,000 gpd water discharged to POTW for 1st. five months of 1984. because of reduction in work & switching from 3 tier drying to 2 tier drying process.

(iii). 72 950 gpd water discharged to POTW for the period May 85 to November 85, reduction in discharge because of reduction in production.

(iv). November 1985 Company's paper-mill operation shut down (about half or more of their total operation)

(v). - From November 1985 further reduction in discharge of waste water to POTW is expected ~~to~~ because of closing of their paper-mill operation. Updated data were not available during field-visit on 4/29/86.

- Water bills ~~for shows~~ ~~show~~ for last three months 2/86, 3/86, 4/86 show usage of water as 87267 gpd, 76 047 gpd & 75 049 gpd respectively.

- Final discharge will be equal to water intake minus sanitary, evaporation & recycling water.

- Company also has 26 acres landfill which has been closed, 5 monitoring wells around it & monitor DGW ~~[illegible]~~ permit.

XII. INSPECTOR(S)

Name: RICHARD LULLA Signature: Lulla 4/30/86

Title: ENVIRONMENTAL ENGINEER

Name: Signature:

Title:

Prepared by: RICHARD LULLA.

Reviewed by: KG Signature: Kenneth Goldstein

MH.

Date Review Complete: 5/12/86

REFERENCE NO. 13

20-15 ✓

BUREAU OF HAZARDOUS WASTE
FACILITY INSPECTION FORM

Facility Name: Celotex Corp. I.D.# 1216A Date: 5/30/80 Time: 3:00

Facility Type: Landfill

Street: Herbert and Market Sts. Lot: 1 Block: 88

Town: Perth Amboy Phone: 826-6881

County: Middlesex Person Contacted: H.E. Deane
Position: Plant Engineer

Inspector: Mike Nalbone

Weather Conditions: Clear /X/ Rain /_/ Snow /_/

Wind Direction: SE Temp: 70 Speed 1-5 MPH

Security Measures: Fence /X/ Yes /_/ No

Guard /X/ Yes /_/ No

Other _____

Safety Features:

Firefighting /X/ Yes /_/ No

Type:

Extinguisher /X/ Guns /_/ Other /_/

Protective Clothing: /X/ Yes /_/ No
(Issued to Employees)

Written Emergency Procedures Posted /_/ Yes /_/ No

Inspection Observations:

Odors: On Site /_/ Yes /X/ No Off Site /_/ Yes /X/ No

Source: _____

Leaks, Spills: On Site /X/ Yes /_/ No Off Site /_/ Yes /X/ No

Source: from oil in drums knocked over during scrap metal removal

Overall Housekeeping: Poor /X/ Fair /_/ Good /_/ Excellent /_/

Drum Storage:

Total No. 125 Size 55 Type steel

Stacked Height: /_/ 1 Drum /X/ 2 Drums /_/ 3 Drums /_/ 4 or more

Palletized: /_/ Yes /X/ No

Categorized: /_/ Yes /X/ No Labeled: /_/ Yes /X/ No

Manifested: /_/ Yes /X/ No

Condition:

Leaking: /X/ Yes /_/ No Number of Leakers 1-7 but no more

General Condition: /_/ Poor /_/ Fair /X/ Good /_/ Excellent

Vehicles: Registered /_/ Yes /_/ No

Numbers Displayed /_/ Yes /_/ No N/A

Manifest Check: N/A

Properly completed /_/ Yes /_/ No

Explain:

Monitoring System: Air /X/ Yes /_/ No

Water /X/ Yes /_/ No

Does T.O.A. reflect capability: (Treatment/Processes) /X/ Yes /_/ No

Explain:

Samples Gathered: /_/ yes /X/ no Number

Photos: /_/ Yes /X/ No No. Location:

1.

2.

3.

4.

5.

Observations and/or Other Comments The site was improving with the amount of metal and empty drums removed although the Paeco Pad contained drums spilled of their contents. The drums contained oil which was knocked over during the removal of salvagable metal taken by Goldburg Scrap. The spill which occured on the Paeco pad was carried further and further down the pad due to the water overflowing from the non contact cooling water running over the road and onto the area dispersing the oil spill I contacted the office and notified them of the spill. Mr. Deane notified Spills on this situation. Before the entrance of the landfill, the drums stored in this area are drums that contain waste material. I indicated to Mr. Deane the Plant Manager that two weeks will be given to provide me with an inventory of these drums. Once an inventory is made a plan for removal will be initiated.

Since the spill was contained on the pad and was not running off site, I indicated to Mr. Deane it would be to the company's benefit to clean up the

Inspector's Signature

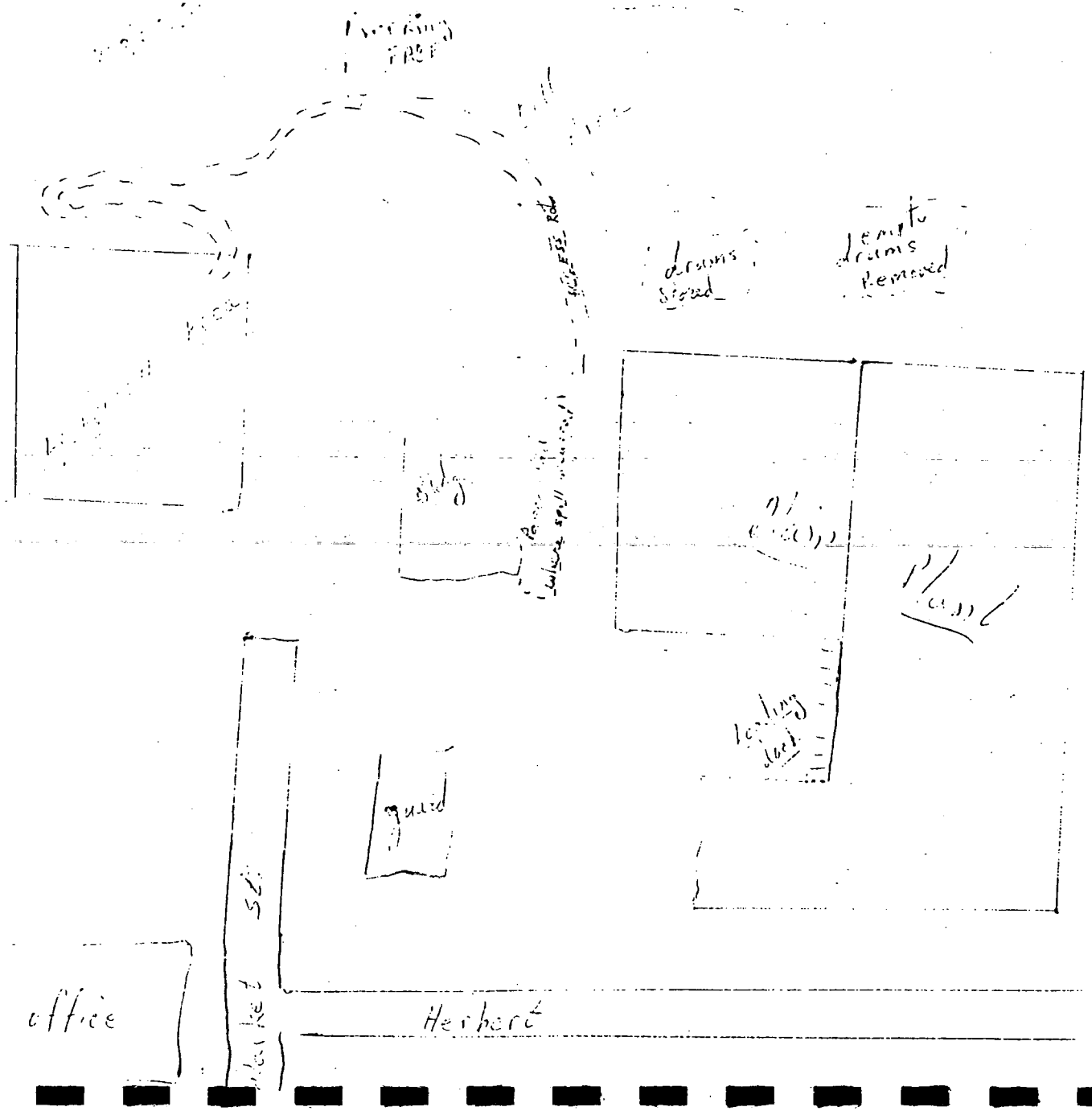
Mr. Deane

Facility Operator's Signature

Observations and/or Other Comments

spill as soon as possible. He said it would be cleaned up by Monday.

tl


drums stored
empty drums removed
guard
office
Herbert

BUREAU OF HAZARDOUS WASTE
FACILITY INSPECTION FORM

Facility Name: Celotex Corporation I.D. # 1216A Date: 8/6/80 Time: 9:30

Facility Type: Landfill

Street: Herbert & Market St. Lot: 1 Block: 88

Town: Perth Amboy Phone: 201-826-6881

County: Middlesex Person Contacted: H. E. Deane
Position: Plant Engineer

Inspector: Mike A. Nalbone

Weather Conditions: Clear /X/ Rain / / Snow / /

Wind Direction: NE Temp: 85 Speed 1-2 MPH

Security Measures: Fence /X/ Yes / / No

Guard /X/ Yes / / No

Other _____

Safety Features:

Firefighting /X/ Yes / / No

Type:

Extinguisher /X/ Guns / / Other / /

Protective Clothing: /X/ Yes / / No
(Issued to Employees)

Written Emergency Procedures Posted /X/ Yes / / No

Inspection Observations:

Odors: On Site / / Yes /X/ No Off Site / / Yes /X/ No

Source: _____

Leaks, Spills: On Site /X/ Yes / / No Off Site / / Yes /X/ No

Source: Spillage from loading area where fuel oil is pumped into tank

Overall Housekeeping: Poor / / Fair /X/ Good / / Excellent / /

Drum Storage:

Total No. 90 Size 55 gal Type metal

Stacked Height: / / 1 Drum /X/ 2 Drums / / 3 Drums / / 4 or more

Palletized: /X/ Yes / / No

Categorized: /X/ Yes /_/ No Labeled: /X/ Yes /_/ No

Manifested: /_/ Yes /X/ No

Condition:

Leaking: /_/ Yes /X/ No Number of Leakers _____

General Condition: /_/ Poor /_/ Fair /X/ Good /_/ Excellent

Vehicles: Registered /_/ Yes /_/ No

Numbers Displayed /_/ Yes /_/ No N/A

Manifest Check:

Properly completed /_/ Yes /_/ No

Explain: N/A

Monitoring System: Air /X/ Yes /_/ No

Water /X/ Yes /_/ No

Does T.O.A. reflect capability: (Treatment/Processes) /X/ Yes /_/ No

Explain:

Samples Gathered: /_/ yes /X/ no Number _____

Photos: /_/ Yes /X/ No No._____ Location: _____

1._____

2._____

3._____

4._____

5._____

Observations and/or Other Comments I made the inspection and noted as mentioned previously a leaking of oil created a small pond between the storage tanks. This oil was contained on the ground and was not leaving the site. The oil covered an area approx. 20'x5' see area (A) on sketch. Work has been going on in this area to do away with the oil spill problem. Since this area was lower than the surrounding ground level, a clay like gravel mix has been placed in this area. Since I fell this is first priority to clean up the oil and finish the grading of fill material in this are I am recommending that this be finished by next week. The landfill is in compliance although due to the hard rains some areas of cover are starting to erode and wash outs are beginning to occur. This should be corrected in the future after the oil spill area is finished and cleaned up.

A geat deal of progress has been made over the last several weeks regarding their number of drum storage. The number of drums have been reduced and only that product used in their processes have been categorized, placed on a concrete pad and are stored.

Mike Nelson

e

BUREAU OF HAZARDOUS WASTE
FACILITY INSPECTION FORM

Facility Name: Celotex Corporation I.D. # 1216A Date: 11/19/80 Time: 1:30

Facility Type: Landfill

Street: Herbert & Market St. Lot: 1 Block: 88

Town: Perth Amboy Phone: 826-6881

County: Middlesex Person Contacted: Bruno Tucci
Position:

Inspector: Mike Nalbone

Weather Conditions: Clear /X/ Rain /_/ Snow /_/

Wind Direction: NW Temp: 40 Speed 5-8 MPH

Security Measures: Fence /X/ Yes /_/ No

Guard /X/ Yes /_/ No

Other _____

Safety Features:

Firefighting /X/ Yes /_/ No

Type:

Extinguisher /X/ Guns /_/ Other /_/

Protective Clothing: /X/ Yes /_/ No
(Issued to Employees)

Written Emergency Procedures Posted /X/ Yes /_/ No

Inspection Observations:

Odors: On Site /X/ Yes /_/ No Off Site /_/ Yes /X/ No

Source: From pater mill on site

Leaks, Spills: On Site /X/ Yes /_/ No Off Site /_/ Yes /X/ No

Source: Spill of asphalt at asphalt loading valve.

Overall Housekeeping: Poor /_/ Fair /_/ Good /X/ Excellent /_/

Drum Storage:

Total No. 24 Size 55 gal. Type steel

Stacked Height: /X/ 1 Drum /_/ 2 Drums /_/ 3 Drums /_/ 4 or more

Palletized: /X/ Yes /_/ No

HW/EF #12-76

BUREAU OF HAZARDOUS WASTE
FACILITY INSPECTION FORM

Name: Cabot Corp. I.D. # 1216A Date: 1/6/82 Time: 14:15

Type: Land fill

Street: Herbert + Market Lot: 1 Block: 88

Town: Perth Amboy Phone: (201) 826-6881

County: Middlesex Person Contacted: Jim Smith

Inspector: B. Venner / B. Czachor Position: project engineer

Weather Conditions: Clear [ ] Rain [ ] Snow [ ] cloudy [X]

Wind Direction: S Temp: 36°F Speed 5-10 MPH

Security Measures: Fence [X] Yes [ ] No

Guard [X] Yes [ ] No

Other _____

Safety Features:

Firefighting [X] Yes [ ] No

Type:

Extinguisher [X] Guns [ ] Other [ ]

Protective Clothing: [X] Yes [ ] No
(Issued to Employees)

Written Emergency Procedures Posted [X] Yes [ ] No

Inspection Observations:

Odors: On Site [ ] Yes [X] No Off Site [ ] Yes [X] No

Source: —

Leaks, Spills: On Site [X] Yes [ ] No Off Site [ ] Yes [X] No

Source: See Comment #8

Overall Housekeeping: Poor [ ] Fair [ ] Good [X] Excellent [ ]

Drum Storage: N/A

Total No. _____ Size _____ Type _____

Stacked Height: [ ] 1 Drum [ ] 2 Drums [X] 3 Drums [ ] 4 or more N/A

Palletized: [X] Yes [ ] No N/A

Categorized: [X] Yes [ ] No N/A Labeled: [X] Yes [ ] No N/A

Manifested: [ ] Yes [X] No ~~on site generated~~ N/A

Condition:

Leaking: [ ] Yes [X] No N/A Number of Leakers _____

General Condition: [ ] Poor [ ] Fair [X] Good [ ] Excellent N/A

Vehicles: Registered [ ] Yes [ ] No N/A

Numbers Displayed [ ] Yes [ ] No N/A

Manifest Check: No Hazardous waste shipped off site.

Properly completed [ ] Yes [ ] No N/A

Explain:

Monitoring System: Air [X] Yes [ ] No

Water [ ] Yes [X] No

Does T.O.A. reflect capability: (Treatment/Processes) [X] Yes [ ] No

Explain:

Samples Gathered: [ ] yes [X] no Number _____

Photos: [ ] Yes [X] No No. _____ Location: _____

1. _____

2. _____

3. _____

4. _____

5. _____

Observations and/or Other Comments

① Erosion noted on the southern side of the landfill. This fresh erosion may have been due to the rain of 1/4/82.

② Dirt piles from excavation of road (report of 12/17/81) are still there & have not been spread across the surface of the landfill to help stop ponding.

③ The drain on the northern side of the landfill was not

Inspector's Signature

Bruce Venner

Facility Operator's Signature

[signature]

Observations and/or Other Comments

completely effective with the rain on 1/4/82. Some washout was noted on the slope going down to the drain outfall. A white substance was noted on the ground and mud around the drain outfall. Mr Jim Smith told us that this material was vermiculite.

(4) Moderate ponding was noted on top of the landfill. On one ponded area a sheen was noted.

(5) The working face of the landfill in the northeastern area was not completely covered

(6) No disposal or activity was noted on the landfill at the time of inspection.

(7) A very slight sheen was noted in ponded water and mud by #6 fuel oil unloading zone.

(8) A very small spill of tar was noted in the asphalt loading ~~zone~~ zone. There was also a light sheen on the ponded water and mud in this area.

Inspector's Signature

Bruce Vennel

Facility Operator's Signature

[signature]

BUREAU OF HAZARDOUS WASTE
FACILITY INSPECTION FORM

HW/EE #12-76

Facility Name: Celotex Corp. I.D. #1216 A Date: 1/28/82 Time: 16:00

Facility Type: Landfill

Street: Herbert & Market Lot: 1 Block: 88

Town: Perth Amboy Phone (201) 826-6881

County: Middlesex Person Contacted: Jim Smith

Position: Project Engineer

Inspector: Bruce Venner

Weather Conditions: Clear [X] Rain [ ] Snow [ ]

Wind Direction: W Temp: 32°F Speed 5-10 MPH

Security Measures: Fence [X] Yes [ ] No

Guard [X] Yes [ ] No

Other _____

Safety Features:

Firefighting [X] Yes [ ] No

Type:

Extinguisher [X] Guns [ ] Other [ ]

Protective Clothing: [X] Yes [ ] No
(Issued to Employees)

Written Emergency Procedures Posted [X] Yes [ ] No

Inspection Observations:

Odors: On Site [ ] Yes [X] No Off Site [ ] Yes [X] No

Source: _____

Leaks, Spills: On Site [X] Yes [ ] No Off Site [ ] Yes [X] No

Source: fuel oil trucks making deliveries, see comments #5,7

Overall Housekeeping: Poor [ ] Fair [ ] Good [X] Excellent [ ]

Drum Storage: N/A

Total No. _____ Size _____ Type _____

Stacked Height: [ ] 1 Drum [ ] 2 Drums [ ] 3 Drums [ ] 4 or more

Palletized: [ ] Yes [ ] No

N/A

2-11-82
BDP

Categorized: [ ] Yes [ ] No Labeled: [ ] Yes [ ] No N/A

Manifested: [ ] Yes [ ] No N/A

Condition:

Leaking: [ ] Yes [ ] No N/A Number of Leakers _____

General Condition: [ ] Poor [ ] Fair [ ] Good [ ] Excellent N/A

Vehicles: Registered [X] Yes [ ] No N/A

Numbers Displayed [ ] Yes [ ] No N/A

Manifest Check: No Hazardous waste shipped off site

Properly completed [ ] Yes [ ] No N/A

Explain:

Monitoring System: Air [X] Yes [ ] No

Water [ ] Yes [X] No

Does T.O.A. reflect capability: (Treatment/Processes) [X] Yes [ ] No

Explain:

Samples Gathered: [ ] yes [X] no Number —

Photos: [ ] Yes [X] No No. _____ Location: _____

1. _____

2. _____

3. _____

4. _____

5. _____

Observations and/or Other Comments

① No new erosion noted on landfill site

② Landfill surface is frozen and a large percentage of the surface area is covered with ice and snow.

③ There has been no activity on the landfill since the snow of App. 1/14/82.

④ The drainage ~~system on the~~ eastern side of the landfill is frozen

Inspector's Signature

Bruce Venner

Facility Operator's Signature

[signature]

ns and/or Other Comments

Three small spills of #6 fuel oil were noted in the area of the fuel oil loading zone. These spills measured app 1'6" x 1'6" each. Mr Jim Smith stated that these would be cleaned tomorrow morning, 1/29/82.

(6) Thirteen-five gallon buckets of hardened ashfault roll saturan were noted next to the ashfault loading station.

(7) Spilled and hardened ashfault was noted on the ground around the ashfault unloading pump. This material was brought to Mr Smith's attention

Inspector's Signature

Bruce Venney

Facility Operator's Signature

Jerry F. Smith

REFERENCE NO. 14

GEOHYDROLOGY AND DIGITAL-SIMULATION MODEL OF THE FARRINGTON AQUIFER IN THE NORTHERN COASTAL PLAIN OF NEW JERSEY

By George M. Farlekas

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations 79-106

Prepared in cooperation with
New Jersey Department of Environmental
Protection, Division of Water Resources

August 1979

Recent investigations of the geology of the northern part of the Coastal Plain of New Jersey include a report by Owens, Minard, and Sohl (1968) on the Cretaceous deltas and a report by Owens and Sohl (1969) on the Cretaceous-Tertiary shelf and deltaic paleoenvironments. A recent paper by Perry and others (1975) presents a survey of the stratigraphy of the Atlantic Coastal Margin and includes detailed stratigraphic sections of the northern part of the New Jersey Coastal Plain.

Acknowledgments

The assistance of state government officials and private individuals is gratefully acknowledged for furnishing well information and permitting access to wells. Special thanks are extended to the Duhernal Water System officials for providing hydrologic data from their files. Gerard P. Lennon and Flavian Stellerine, both formerly of the U.S. Geological Survey, provided valuable assistance with computer programming.

GEOHYDROLOGY

Potomac-Raritan-Magothy Aquifer System

The northern part of the Atlantic Coastal Plain of New Jersey is underlain by unconsolidated silt, clay, sand, and gravel deposited under fluvial, fluvial-deltaic, and marine conditions. The sediments range in age from Early Cretaceous to Holocene and lie unconformably on a pre-Cretaceous bedrock consisting mainly of sedimentary and igneous rocks of Triassic age and older crystalline rocks. The unconsolidated sediments crop out in northeast-southwest directions and thicken downdip to the southeast. Their thickness ranges from a featheredge in Middlesex County to about 1,700 ft in Monmouth County (Gill and Farlekas, 1976). The present study is concerned with the lower part of this sedimentary sequence.

The most productive source of ground water in the northern part of the New Jersey Coastal Plain is the Potomac-Raritan-Magothy aquifer system, which is made up of the Potomac Group and the Raritan and Magothy Formations of Cretaceous age. This wedge-shaped aquifer system, consisting of quartz sand with some gravel, silt, and clay, thickens from a featheredge at its outcrop in Middlesex County to a maximum of about 600 ft in Monmouth County (Gill and Farlekas, 1976). Overlying the Potomac-Raritan-Magothy aquifer system is a confining unit consisting of the Cretaceous Merchantville Formation and the Woodbury Clay. It is the most extensive confining unit in the New Jersey Coastal Plain and ranges in thickness from a featheredge in Middlesex County to a maximum of approximately 300 ft in Monmouth County. Structure contour maps of the top of the Merchantville Formation, the Magothy Formation, and the pre-Cretaceous bedrock in New Jersey appear in Gill and Farlekas (1976).

The Potomac-Raritan-Magothy aquifer system in the northern part of the New Jersey Coastal Plain contains two major aquifers; the Farrington aquifer, consisting mainly of the Farrington Sand Member of the Raritan Formation, and the Old Bridge aquifer, consisting mainly of the Old Bridge Sand Member of the Magothy Formation. The Old Bridge Sand Member was originally placed in the upper part of the Raritan Formation. However, Wolfe and Pakiser (1971, p. 41) designated the unit as the basal member of the younger Magothy Formation. An analysis of geophysical and water-level data indicate that the Farrington and the Old Bridge function as separate aquifers in Middlesex County, and each can be traced downdip into Monmouth County.

The Woodbridge Clay Member of the Raritan Formation, an extensive confining unit that separates the Farrington Sand Member from the overlying Old Bridge Sand Member, can also be traced downdip from the outcrop area in Raritan Bay to the shore area in Monmouth County. This interpretation is supported by a recently published cross section along the Atlantic Coast (Perry and others, 1975, p. 1542). The stratigraphic section shown in Table 1 is modified from Perry and others (1975, p. 1539) and shows the correlation of part of the Cretaceous section in the northern part of the Coastal Plain of New Jersey (Middlesex and Monmouth Counties) with sediments on Long Island.

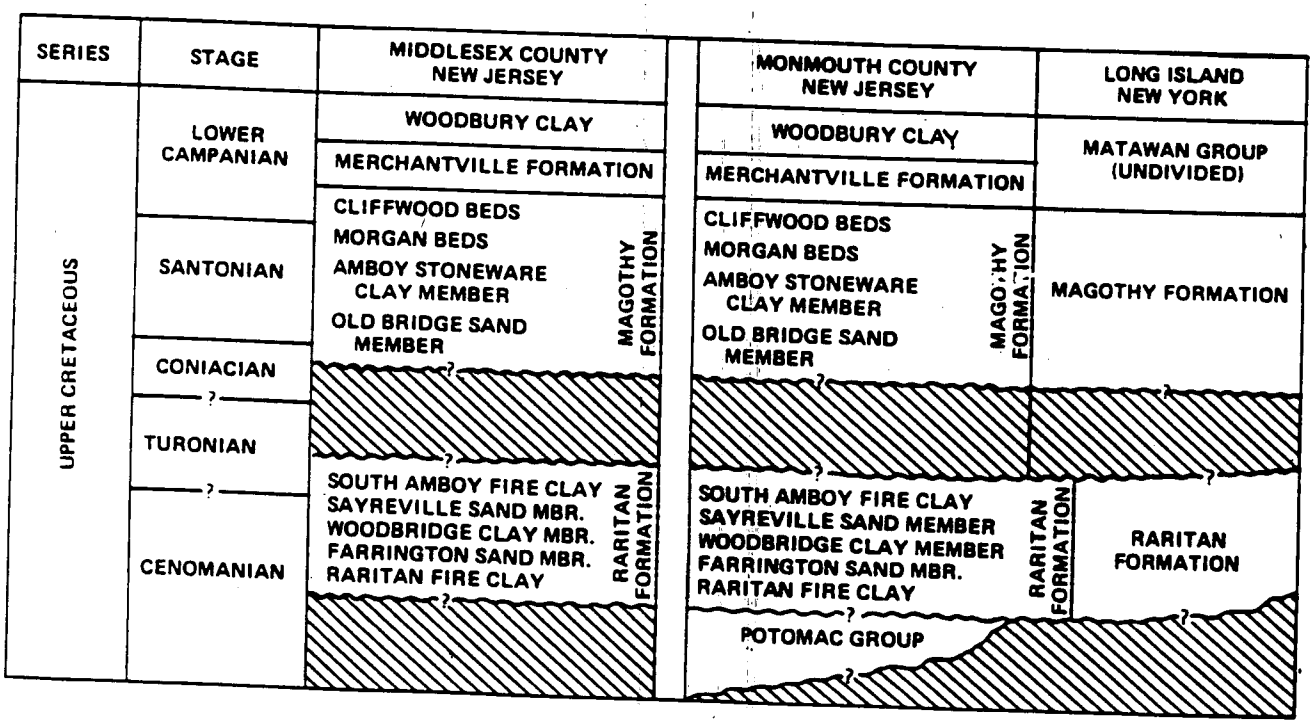


Table 1.--Correlation of stratigraphic units in Middlesex and Monmouth Counties, New Jersey and Long Island, New York (Modified from Perry and others, 1975).

Lower Confining Unit

The lower confining unit in Middlesex County, as defined in this report, consists mainly of a layer of clay and the underlying consolidated rocks. Southeast of the Monmouth-Middlesex County line, the lower confining unit is defined as the first layer of clay thicker than 20 ft beneath the Farrington aquifer.

In Middlesex County, the upper part of the lower confining unit is the Raritan fire clay (Barksdale and others, 1943). This clay lies between the Farrington Sand Member and bedrock in much of Middlesex County. Near the Farrington outcrop, the Raritan fire clay ranges in thickness from 0 to 35 ft, and the thickness increases downdip (Barksdale and others, 1943, p. 140). Well data near Spotswood, Old Bridge, Runyon, Parlin, and South Amboy indicate a thickness of up to 86 ft for the Raritan fire clay.

The lower part of the confining unit in Middlesex County consists of rocks of Triassic age and pre-Triassic crystalline rocks. An analysis of drillers' logs indicates that Triassic rocks extend beneath the northwestern edge of the coastal plain southward for approximately 5 mi. Farther southeast, the bedrock is composed of pre-Triassic crystalline rocks. The thickness of the Triassic and crystalline rocks is not known.

Within the Triassic sequence is a thick diabase sill, which is exposed north of the study area along the Hudson River, where it forms the Palisades. The same diabase sill occurs on Staten Island, N.Y., in Middlesex County, N.J., and farther west. The sill is a continuous unit within the study area and is overlain by post-Triassic sediments (Barksdale and others, 1943, p. 15). The hydrologic significance of this sill will be discussed in the section on aquifer characteristics.

The lower confining unit southeast of the Middlesex-Monmouth County line is defined as the first confining layer of clay below the Farrington aquifer thicker than 20 ft. Only a few wells or test holes completely penetrate the Farrington in this area. Consequently, data on the sediments between the Farrington and bedrock are scant. Geophysical logs of a test hole just north of Freehold Borough suggest the presence of at least 60 ft of silt and clay below the principal aquifer. Southeast of the Middlesex-Monmouth County line, geophysical logs indicate a thickness of up to 200 ft for the lower confining unit.

In parts of Sayreville Borough, where the Sayreville is missing, the South Amboy Fire Clay Member of the Raritan Formation lies directly on the Woodbridge (Barksdale and others, 1943, p. 102). The South Amboy Fire Clay Member consists of dark-colored silt and clay. It has a maximum thickness of 35 ft and is lenticular. In places where the Sayreville is clayey, thin, or missing, the Woodbridge and the South Amboy act as a single confining unit between the Old Bridge aquifer and the underlying Farrington aquifer.

Old Bridge Aquifer

The Old Bridge aquifer in the northern Coastal Plain of New Jersey consists primarily of the Old Bridge Sand Member of the Magothy Formation. The aquifer also includes overlying surficial sands and gravels at or near the outcrop areas (Owens and Minard, 1975). Southeast of the outcrop, where the South Amboy Fire Clay Member is thin or missing, the Old Bridge aquifer consists of the Old Bridge Sand and the underlying Sayreville Sand Members.

The Old Bridge Sand Member consists largely of light colored, medium sand and locally contains interbeds of light to dark colored, clayey silts. Owens and Sohl (1969, p. 239) have stated that the Old Bridge was most likely deposited as point bar sands in river channels. The sand crops out in an irregular pattern extending from Raritan Bay to beyond Jamesburg. The thickness of the Old Bridge ranges from 80 to 110 ft (Barksdale and others, 1943, p. 68).

In some locations in Middlesex and Mercer Counties, surficial deposits overlie the Old Bridge (Owens and Minard, 1975). Consisting mostly of sand, these deposits increase the thickness and the effective recharge area of the Old Bridge aquifer. In the vicinity of Jamesburg, the thickness of the surficial deposits is in excess of 125 ft with the altitude of the base of the deposits ranging from 65 to 150 ft above mean sea level (Owens and Minard, 1975).

The Old Bridge is the most productive aquifer in Middlesex and Monmouth Counties. Ground-water withdrawals from the Old Bridge have caused substantial water-level declines southeast of the outcrop area. A 1959 potentiometric map using water-level data from 1958 to 1960 is shown in figure 10 and a potentiometric map using water-level measurements obtained in November 1973 is shown in figure 11. A comparison of the maps indicates that the greatest decline in water level occurred in the Freehold area in Monmouth County.

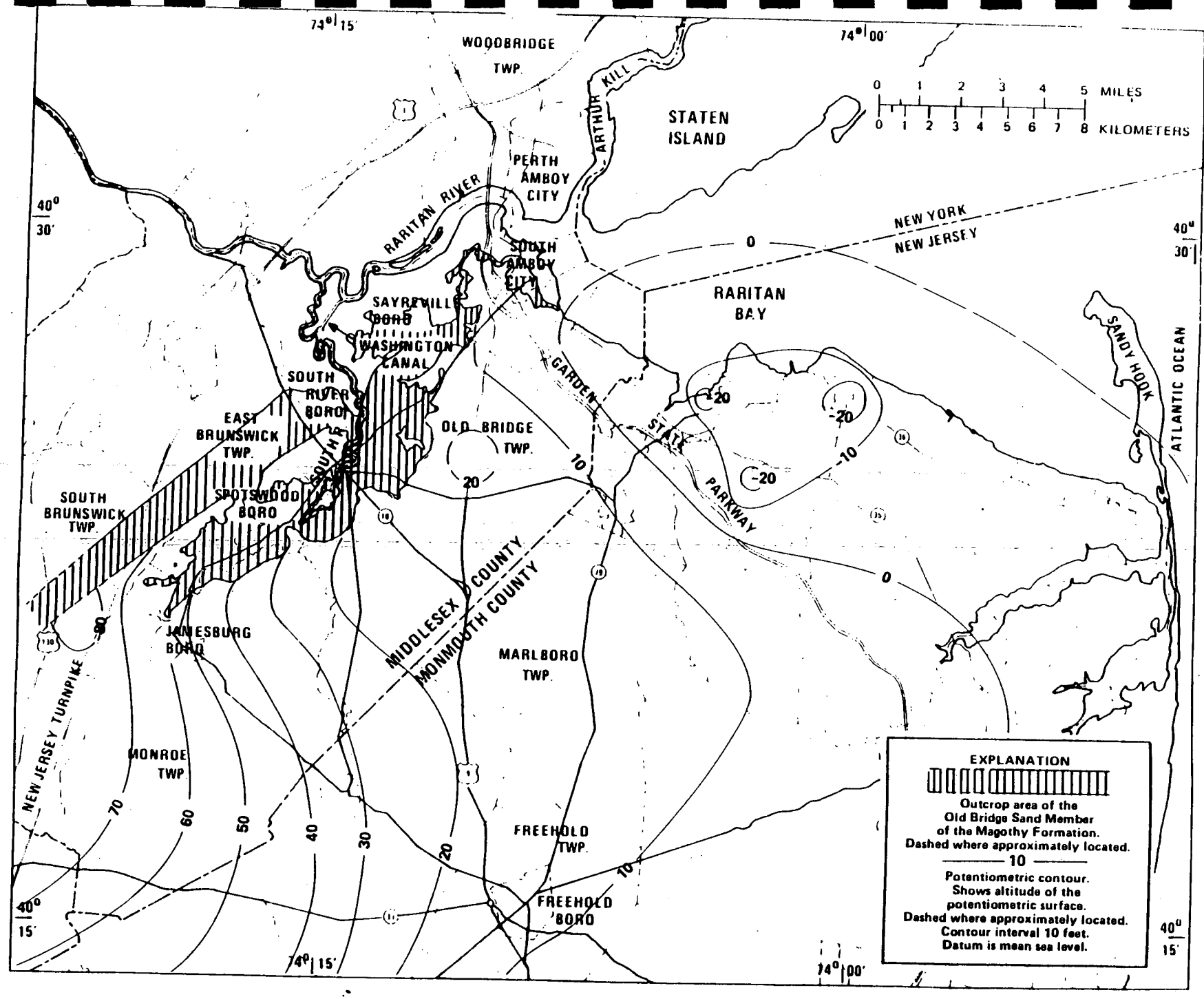


Figure 10. Generalized potentiometric surface of the Old Bridge aquifer, 1959.

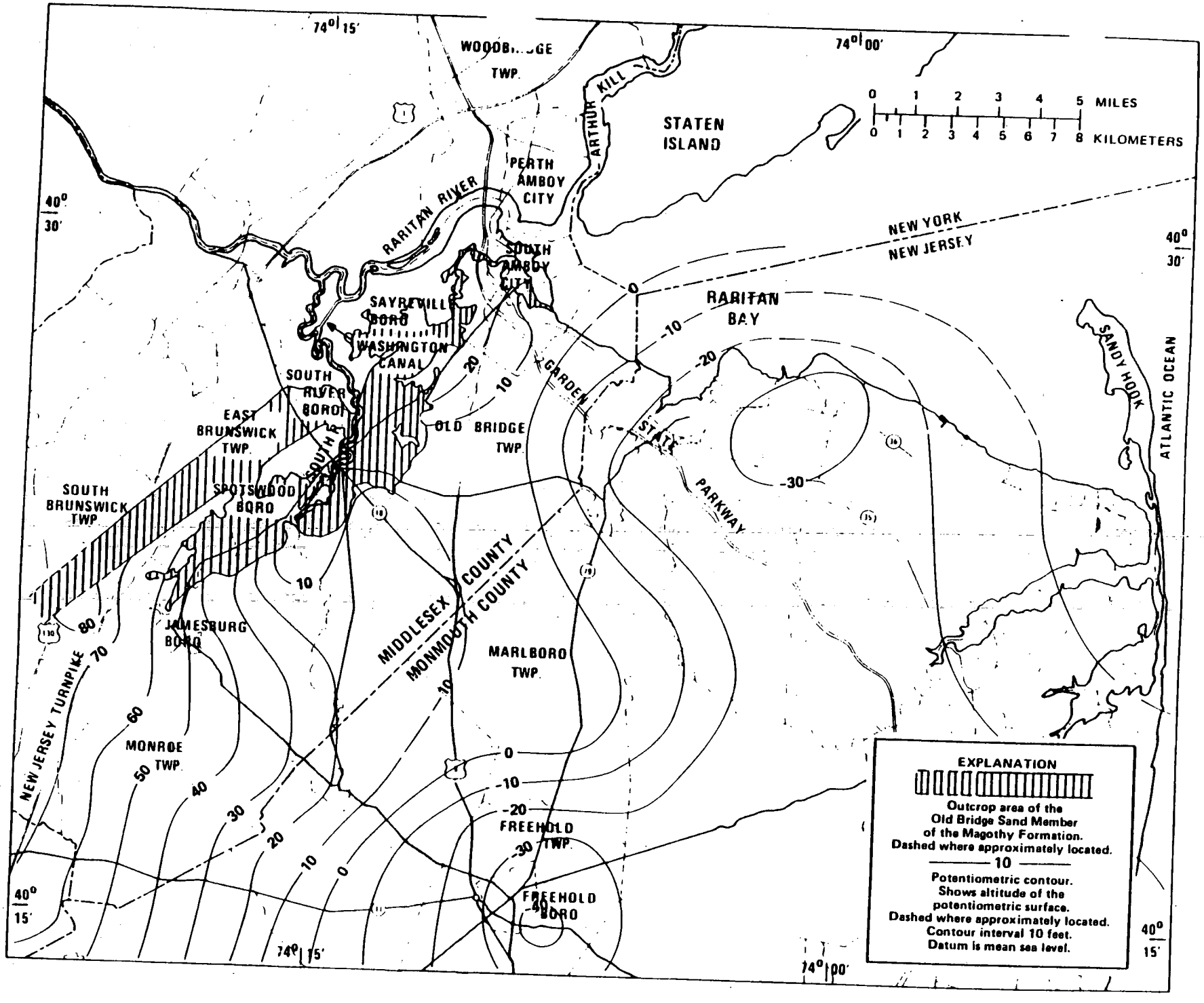


Figure 11. Potentiometric surface of the Old Bridge aquifer, November 1973.

REFERENCE NO. 15

Trube

MIDDLESEX COUNTY 208 AREA-WIDE

WASTE TREATMENT MANAGEMENT PLANNING

TASK 8 - GROUND-WATER ANALYSIS

A. DESCRIPTION OF GROUND-WATER SYSTEM
B. GROUND-WATER POLLUTION SOURCES

prepared by

Geraghty & Miller, Inc.
Consulting Ground-Water Geologists and Hydrologists
44 Sintsink Drive East
Port Washington, New York 11050

November 1976

This report was prepared under a subcontract of the Middlesex 208 Joint Venture in cooperation with the Middlesex County Planning Board. The work was supported by funds provided to the Middlesex County Board of Chosen Freeholders by the U. S. Environmental Protection Agency, Region II, under EPA Grant No. P002102-01-0 as authorized by the Federal Water Pollution Control Act Amendments of 1972, PL 92-500.

HYDROGEOLOGIC FRAMEWORK

The study region is underlain by consolidated and unconsolidated rocks ranging in age from Precambrian to Recent. The northwestern part of the region covering about 160 square miles falls within the Triassic Lowland physiographic region and is underlain by sedimentary and igneous rocks. To the southeast lies the Coastal Plain, a region extending over some 220 square miles. The Coastal Plain is underlain by a thick wedge of sands, gravels, clays, and silts of Cretaceous age. These deposits were laid down by rivers in a deltaic environment and generally thicken in a downdip direction. Younger sediments overlie older sediments in a southeastward direction. The stratigraphic sequence of the various rock units together with their water-bearing properties is shown on Table 1.

Major ground-water reservoirs which are also the most heavily pumped are Triassic sandstones and shales of the Brunswick Formation and the Farrington and Old Bridge Sands of Cretaceous age. Aquifers of lesser importance are the Sayreville Sand, the Englishtown Sand, and the Mount Laurel and Wenonah Sands, all of Cretaceous age and the Pensauken Formation and glacial drift deposits of Pleistocene age.

The Triassic bedrock north of the Raritan River is overlain by sediments of glacial age. East of Plainfield, these deposits consist mostly of glacial till (unsorted sand, gravel, boulders and clay),but to the west and south, permeable glacial outwash deposits are present. The aquifers extend beyond the confines of the study region; the Triassic aquifer northward into Union County and westward across the Millstone River into Somerset County,and the

Table 1 - Geologic Units and Their Ground-Water Potential in the Middlesex 208 Area.

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Quaternary	Alluvium	Silt, sand and mud	0 - 50	Relatively impermeable; no impor tance as source of water.
	Eolian deposits	Sand dunes	0 - 40	Of no importance as source of wat as mostly unsaturated.
	Stratified drift	Sand, gravel	0 - 60	Permeable and locally an importan water source north of Raritan River
	Non-stratified drift (till)	Clay, boulders, gravel, sand, silt	0 - 150	Of no importance as source of wate Absorbs precipitation and supplies recharge to underlying Triassic aqu
	Cape May Formation	Fine- to medium-grained quartz sand and some fine gravel	0 - 50	May fill pre-Cape May stream char nels and overlies portions of Triassi and Old Bridge aquifers. Locally exploited for domestic wells.
	Pensauken Formation	Clayey sand and gravel	0 - 70	Overlies portions of coastal plain and Triassic aquifers. Locally tapp by domestic wells that yield 50 to 100 gpm.
Cretaceous	Mount Laurel and Wenonah Sands	Micaceous sand	50	Lower portion of sand crops out alor southern Middlesex County border. Locally important aquifer.
	Marshalltown Formation	Micaceous, sandy clay	40	Confining bed.
	Englishtown Sand	Micaceous, fine- to medium-grained sand, some clay lenses	100	Present in limited area along south-eastern Middlesex. Locally importc as water source. Presently not deve oped.
	Woodbury Clay	Black, micaceous clay	50	Major confining zone to underlying aquifers.
	Merchantville Clay	Black, micaceous clay with glauconite	50 - 60	

Table 1 - (Continued)

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Cretaceous	Magothy Formation	Fine lignitic sand and black clay	90 - 130	Not important as aquifer. Well yie are low but sufficient for domestic purposes.
	Amboy Stoneware Clay	Gray to black clay with carbonaceous material	0 - 30	Considered to be lower facies of Ma thy Formation. Confining bed.
	Old Bridge Sand	Fine- to coarse-grained white to yellow sand	20 - 110	Major aquifer tapped by many wells Median specific capacity is 20 gpm Transmissivity range 140,000 to 230,000 gpd/ft. Artificially recha in places. Well yields 200 to 1,00 gpm.
	South Amboy Fire Clay	Varicolored clay	0 - 35	Confining bed.
	Sayreville Sand	Fine, white micaceous sand	0 - 40	Not continuous. Unimportant as aquifer.
	Woodbridge Clay	Gray clay and clayey sand	50 - 100	Major confining bed overlying Farrington Sand.
	Farrington Sand	Gray to yellow fine- to medium-grained sand. Contains some clay layers.	30 - 150	Major aquifer tapped by many wells Median specific capacity is 29 gpm/ Transmissivity range 50,000 to 150,000 gpd/ft. Well yields 500 to 2,000 gpm.
	Raritan Fire Clay	Varicolored basal clay	0 - 90	Confining bed.
Triassic (Newark Group)	Brunswick Formation	Red shale interbedded with siltstone and sandstone	5,000+	Major aquifer north of Raritan River Specific capacity is 0.1 to 25 gpm/f Transmissivity range 1,000 to 4,00 gpd/ft. Well yields 50 to 700 gpm.
	Lockatong Formation	Hard shale and argillite	1,000+	Present only in small areas. Of little importance as aquifers.
	Stockton Formation	Conglomerate and sandstone	1,000+	

Table 1 - (Continued)

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Triassic	Diabase and basalt	Dense crystalline rock	500	Unimportant aquifer because of low permeability and hardness. Acts as confining bed. Well yields 0 to 10 gpm.
Precambrian	Gneiss and schist	Metamorphic crystalline rocks	5,000+	Present at depth below Coastal Plain Of no importance as aquifer; not tapped by wells.

Coastal Plain aquifers start at the Fall Line and probably continue southward into Mercer and Monmouth Counties. Tracing of the Old Bridge and Farrington Sands beyond the Middlesex County borders is difficult due to complex stratigraphic conditions.

Ground water in the bedrock aquifer is found in fractures and other openings, in contrast to the unconsolidated Coastal Plain deposits where ground water fills the voids between individual grains of the sediment. Both water-table and confined or artesian aquifers are present. The Triassic sandstone and shale and both the Farrington and Old Bridge Sands are under water-table conditions where exposed in the outcrop area. Where overlain by other sediments or zones of low permeability, these aquifers become confined.

Water-table aquifers are recharged by precipitation and sometimes by fluids disposed of in the subsurface, such as septic tank or cesspool effluent. Ordinarily, surface-water bodies act as discharge areas for water-table aquifers; however, in areas of heavy pumping where ground-water levels have fallen below river, stream, or lake levels, the water-table aquifers might receive recharge through surface-water infiltration if geologic conditions are favorable.

The artesian aquifers receive recharge from several sources, namely precipitation on the outcrop area, vertical leakage from confining beds above or below the aquifer, and infiltration of water from rivers or lakes in contact with the aquifer. The impact of man's activities has led to water-level declines and changes in natural head relationships as will be discussed shortly.

On the Coastal Plain, the extensively distributed and thick clay beds such as the Wood-

bridge, Merchantville and Woodbury act as confining beds and to a large degree prevent downward or upward movement of water in the hydrologic section. Under pre-pumping conditions, the aquifers were brimful with water, discharging excess water to streams that crossed the outcrop area or causing ground-water flow to move downdip through the confined aquifer to discharge points along the Atlantic Ocean. For example, heads in the Farrington Sand at the beginning of exploitation in 1897 were about 30 to 40 feet above land surface in the Perth Amboy well field and the wells flowed. Increased pumpage over the years decreased the head and the present potentiometric surface in the region is about 70 feet below sea level, indicating a historic head decline of roughly 100 feet. No historical decline of the water table in the Old Bridge Sand or Triassic rocks is known in spite of large seasonal water-level variations.

Historical trends of water levels in the Farrington Sand are shown on Figures 1 and 2. These records from U. S. Geological Survey observation wells depict downward trends in the South River, Perth Amboy and Duhernal Sayreville (Dusay) observation wells located in the pumping zones. The Fisher observation well (Figure 1) shows a stable water-level trend; it is located in the recharge area removed from the influence of pumping (locations of all wells are shown on Plate 14). Figures 3 and 4 show the historical record of water-level fluctuation in seven observation wells tapping the Old Bridge Sand (for locations of wells see Plate 13). As shown, water levels in the Duhernal wells declined to below sea level during the drought period 1963-65 but have now recovered to pre-drought elevations. No long-term dewatering of the Old Bridge aquifer is evident.

Little is known about head relationships between aquifers at depth. In the Forsgate area west of Jamesburg, detailed drilling and testing work was carried out in 1965 in connection with an application for a large ground-water diversion. Observation wells installed in both the shallow and deeper water-bearing zones (presumably Old Bridge and Farrington Sands) were monitored during the 1965-67 period. The hydrographs of these wells shown on Figure 5 indicate a 3-to-5 foot head differential between the upper and lower zone.

Continuous pumpage has caused a decline in water levels in both the Old Bridge and Farrington Sands and several remedial hydrologic schemes have been carried out to rectify these situations. Artificial recharge of the Old Bridge Sand by means of ponding of surface water is practiced by the Duhernal, Perth Amboy and Sayreville water systems. No artificial recharge of the Farrington is carried out but plans for a tidal dam in the South River or the Crab Island Dam in the Raritan River envision the use of fresh river water for artificial recharge operations to both the Farrington and the Old Bridge Sands. The Farrington Sand probably does receive recharge from fresh surface-water bodies adjacent to the outcrop areas of the aquifer such as Lawrence Brook and Farrington Lake. The extent of such recharge, however, has not been determined.

QUALITY OF GROUND WATER

Published and unpublished chemical analyses from the files of the U. S. Geological Survey, public and private water systems and consultants' reports were reviewed to determine the quality of ground water in the study area. The most recent chemical analyses were used to indicate the present quality of water in the various water-bearing formations. Older analyses

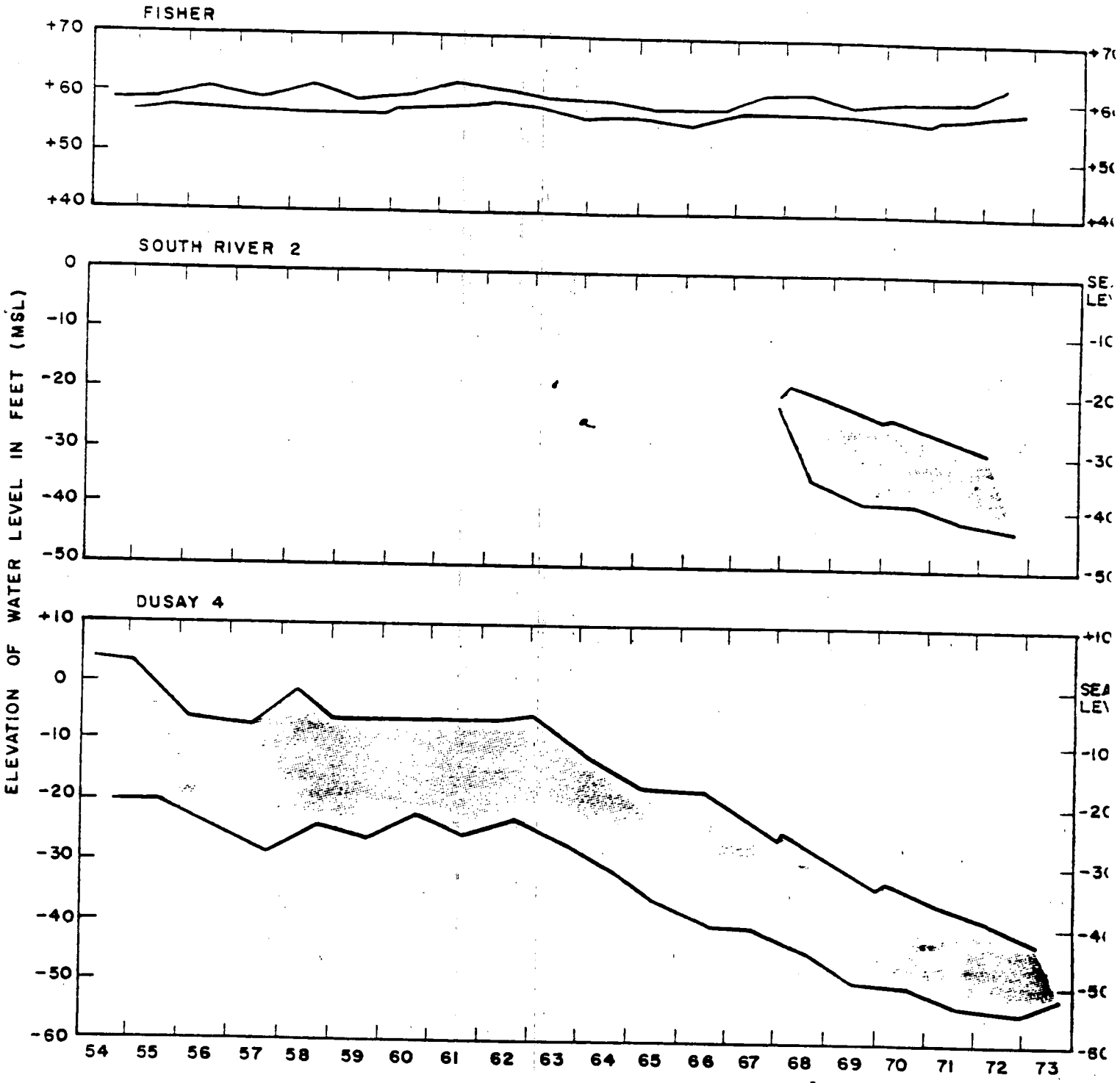


Figure 1 – Yearly high and low water levels in U. S. Geological Survey observation wells tapping the Farrington Sand.

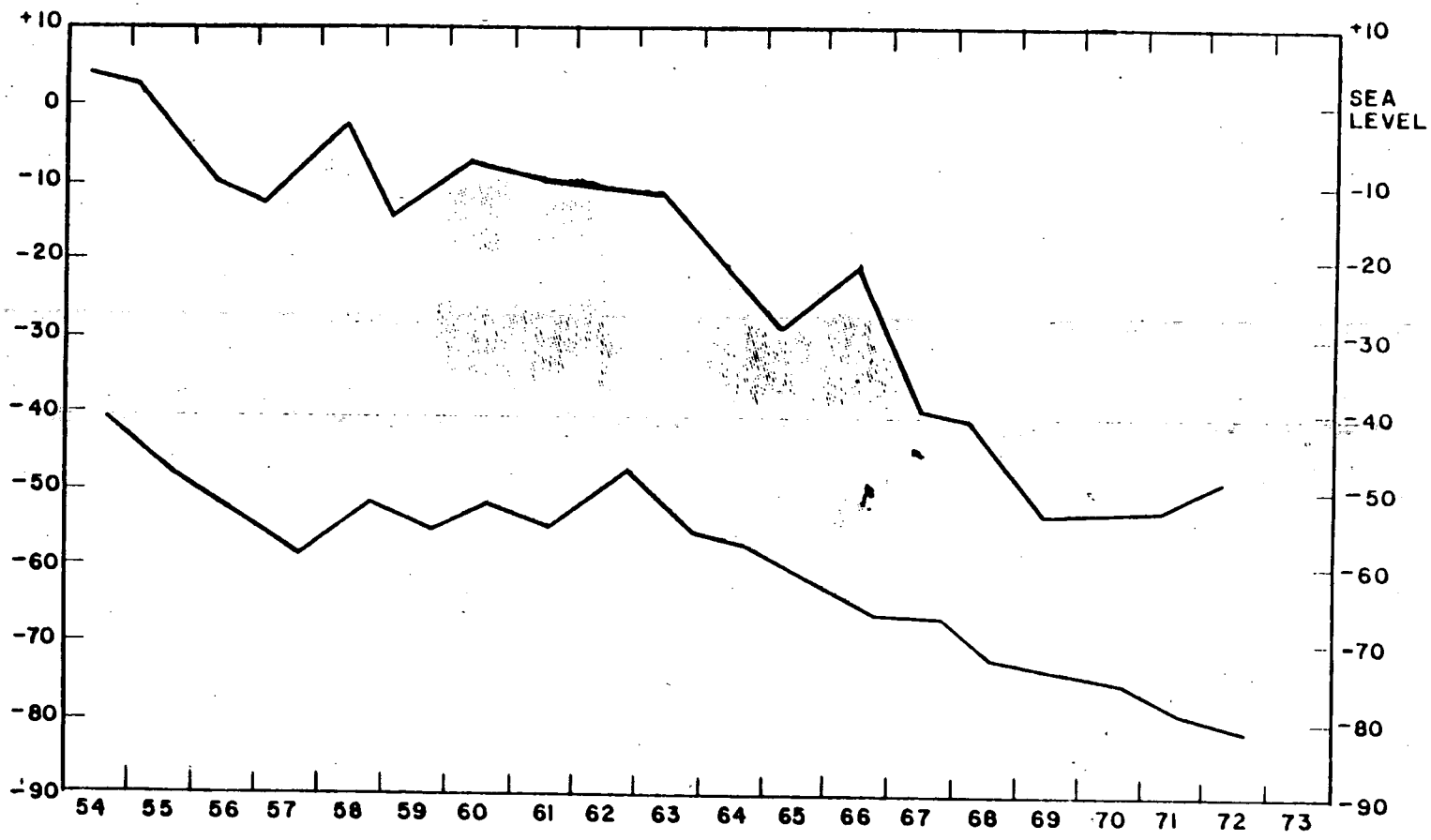


Figure 2 - Yearly high and low water levels in Perth Amboy Water Department Runyon Well (Old Deep 1) tapping the Farrington Sand.

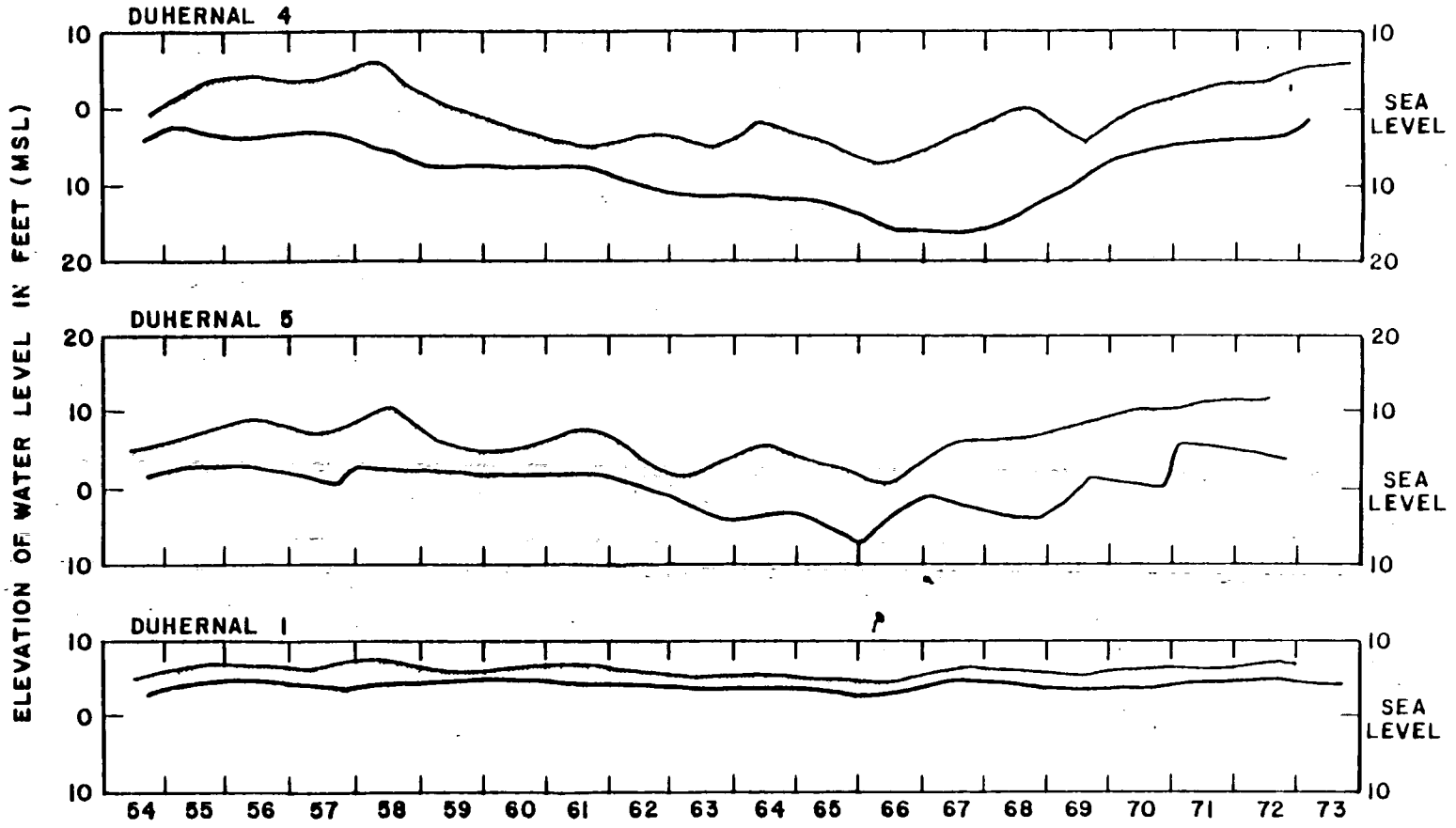


Figure 3 - Yearly high and low water levels in U. S. Geological Survey observation wells tapping the Old Bridge Sand.

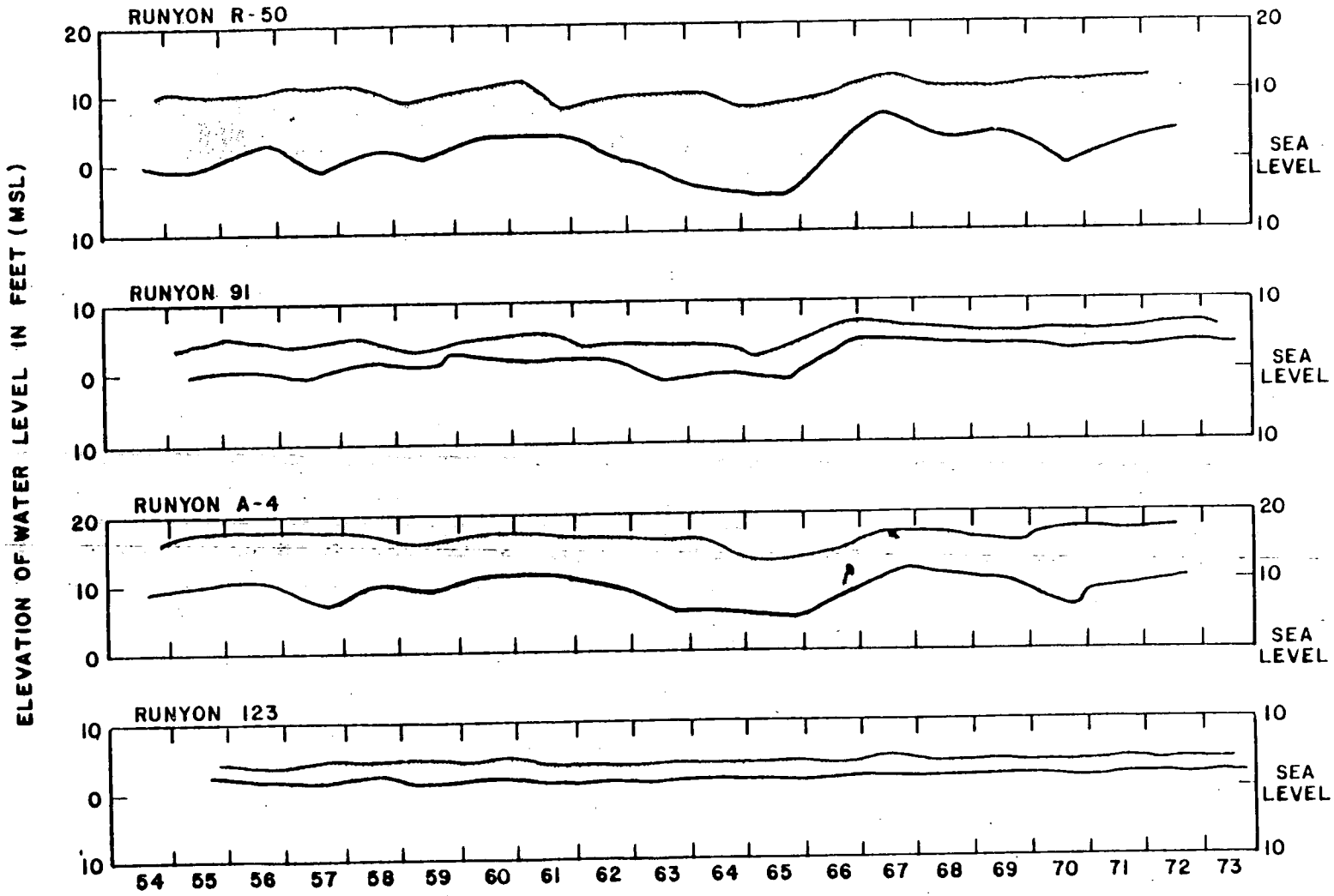


Figure 4 - Yearly high and low water levels in U. S. Geological Survey observation wells tapping the Old Bridge Sand.

Aside from instances where ground water has actually been contaminated, there has been no significant effort either to correct or eliminate potential problems, or to require that various abatement and monitoring techniques be undertaken. For example, until recently, there had been no rule that required the lining of industrial waste lagoons or the installation of monitoring wells to determine the presence of contamination.

EFFECTS ON PRESENT AND FUTURE WATER SUPPLIES

With the exception of the few ground-water diversions that are located beyond the major centers of urban and industrial development, almost all of the ground-water diversions from the Cretaceous and Triassic formations would be vulnerable to pollution from these sources. Within the boundaries of these areas, aproximately 30 mgd are presently being diverted from the Old Bridge aquifer, 10 mgd from the Farrington, and 15 mgd from the Triassic formations.

INDUSTRIAL AND MUNICIPAL LANDFILLS

BACKGROUND

According to available information, there are at the present time, 47 landfills [24,25] in the study area which were used for the disposal of municipal wastes and in some locations, industrial solid and liquid waste. It has been noted that available landfill space in the region has been used up at accelerated rates since 1968 because of the significant changes in the rates of disposal. The total quantity of refuse disposed of in Middlesex County in 1968 was approximately 675,000 tons. By 1974, this rate reportedly had increased to 1.7 million tons per year, and appeared to be still growing. The quantity of waste imported from

adjacent areas amounted to over 688,000 tons in 1974 and is presumably increasing at a steady rate. [26)]

A substantial portion of the solid wastes disposed of in landfills is classified as industrial waste products. According to 1972 estimates, approximately 680,000 tons of industrial and other special wastes were collected in Middlesex County. By 1975, it was estimated that the industrial wastes would exceed 750,000 tons and that they might reach one million tons per year by 1985. [26)]

Although the rates of leachate generation vary widely in accordance with the configuration and location of the site and the management of day-to-day operations, a preliminary estimate has been made showing a total of 0.04 million gallons a day of landfill leachate from the various sites in the study area.

In 1973, the Middlesex County Planning Board published a comprehensive report on the Middlesex County Solid Waste Management Program. [24)] This work included an inventory of all the major solid waste disposal sites in the county, including basic information on the design, environmental problems, and operational procedures at each location. Other data have been developed by the New Jersey Department of Environmental Protection regarding observation wells that have been established at selected landfills. Individual engineering reports covering some of the larger landfills were also available which provide the basic design concept and plans for leachate abatement and control. For the most part, the level of detail and quality of information regarding individual sites are inadequate for

the purpose of determining leachate impact on the quality of ground water. There has been no systematic program of ground-water quality monitoring in the vicinity of most sites and no central source of information regarding the details of construction or the operational practices at the individual landfills.

TECHNICAL DISCUSSION

In order for a landfill to produce leachate, there must be water moving through the fill. The sources of water include precipitation, moisture content of the refuse, surface-water infiltration, and ground-water contact with the fill. In any event leachate is not produced in the landfill until at least some significant portion of the fill material has reached field capacity. It has been noted that in order to accomplish this, between one and two inches [27] of water would have to be added per foot depth of the landfill.

The amount of water which may pass through an open dump or poorly constructed landfill is significant. One study noted that once field capacity is reached, 36 inches of rainfall per year upon an open shredded-refuse fill would (theoretically) percolate about one million gallons of contaminated water per acre. [27] In actual practice this amount would probably be significantly reduced by evaporation from the fill surface. The volume of leachate developed by any landfill is generally related to its absorptive capacity, areal extent, and the amount of recharge water available for infiltration. Landfills most often are constructed with a relatively flat top surface, and are covered by (or support) little or no vegetation, and are therefore more condusive to infiltration than to surface run-off and evapotranspiration. They are normally covered with relatively coarse-textured material which further increases the infiltration efficiency. In the study area it is probably

reasonable to assume that at least half of the annual precipitation will penetrate and percolate through the landfill as ground-water recharge. Under these conditions, and assuming an average annual rainfall of 42 inches, a 100-acre site would be capable of producing 57 million gallons of leachate per year, after field capacity of the refuse had been satisfied. This would mean that in the Middlesex County planning area where more than 1,500 acres have been set aside for landfilling that as many as 855 million gallons of leachate may be generated each year.

CASE HISTORIES

Aside from the limited ground-water quality data that have been collected in the vicinity of several of the major landfills (see Appendix D), there are no further data available concerning the quality of ground water or the impact of landfill leachate pollution in the Middlesex study area. In order to further define the extent of this problem at each of the landfill locations, it would be necessary to develop detailed hydrologic profiles and water quality assessments by test drilling and water sampling. Since such data are not presently available, the following case histories indicate the extent to which ground-water pollution may be expected to occur at landfills under similar conditions in the Middlesex region.

Babylon, Long Island, Landfill Site

Studies by the U.S. Geological Survey at the Babylon, Long Island, [28] landfill indicate significant ground-water contamination in the direction of ground-water movement.

Plate I. PRE-QUATERNARY GEOLOGY AND LINES OF SECTIONS

This map shows the outcrop pattern of the geologic units with the Quaternary age formations removed and the lines of six hydrogeologic sections constructed to illustrate subsurface conditions. During Quaternary time much of the study area was blanketed with glacial deposits and stream alluvium, obscuring the stratigraphic relationships of the underlying formations. On this map the Quaternary (Pleistocene and Recent deposits) are not shown so that the areal distribution and stratigraphic relations of the underlying formations can be better understood.

The study area lies within two major physiographic provinces, the Triassic Lowland and the Coastal Plain. The heavy dashed line that roughly bisects the county and runs from southwest to northeast along Devils Brook, Farrington Lake, and Route I north of the Raritan River is known as the Fall Line and represents the northern and landward limit of the Coastal Plain physiographic province. The region north of this line is part of the Triassic Lowland province.

The Triassic Lowland is underlain by bedrock of Triassic age called the Newark Group. Included in this group are the Brunswick, Lockatong, and Stockton Formations consisting of shale, argillite, and sandstone, respectively. Also included within this group are igneous basalt flows of the Watchung Mountains and diabase intrusions.

The Newark Group continues southeast of the Fall Line, but is covered by a thick sequence of Coastal Plain deposits and so is not shown on the map. The Coastal Plain is underlain by a southeasterly dipping and thickening sequence of unconsolidated sand, gravel, clay,

and silt of Cretaceous age. Each Coastal Plain formation shown has a southwest to northeast strike and dips to the southeast. Moving downdip across the Coastal Plain from the Fall Line, the outcrop belts of successively younger geologic formations are crossed. This means that as each formation becomes overlain by younger and younger formations, it lies at progressively greater depths below land surface. For instance, the Old Bridge Sand (part of the Raritan Formation) crops out near Duhernal Lake, but about four miles to the southeast near the county border, the Old Bridge Sand is overlain by four younger formations.

Northwest of the Fall Line are three outliers of undifferentiated Raritan sediments which probably represent erosional remnants of a formerly more extensive Coastal Plain.

The geologic units shown on Plate 1 were taken from the State of New Jersey's Bureau of Geology and Topography geologic overlay sheets 25, 26, 28 and 29, Special Report 8 [1] and the Geologic Map of New Jersey. [8]

Plates 2-7. HYDROGEOLOGIC CROSS SECTIONS I-VI.

Plates 2 through 7 (cross sections I through VI) show the subsurface geologic units beneath the Coastal Plain and their stratigraphic relationships. Sections I through V are roughly parallel to the dip of the unconsolidated formations and run from northwest to southeast while Section VI runs along the strike of the formations from southwest to northeast. The elevation of the bedrock floor deepens in a southeasterly direction with a corresponding thickening of the sequence of unconsolidated sediments that rest on this surface. As the outcrop areas of successively younger formations are crossed in a downdip direction, the upper surface of each formation lies at a progressively greater depth. The dip of the unconsolidated formations and bedrock appear considerably steeper than they actually are because the scales chosen for the sections result in a vertical exaggeration of 40 times. Formations of Precambrian, Triassic, Upper Cretaceous, Pleistocene, and Recent age existing in the study area are represented on the cross sections.

There are three major types of bedrock shown on the cross sections which are from oldest to youngest: Precambrian crystalline rocks, the Newark Group of Triassic age, and a diabase sill or dike also of Triassic age. These rocks are relatively unimportant in the coastal region as sources of ground water because they are usually overlain by more prolific aquifers. However, in the Triassic Lowland area to the northwest, the Newark Group is a major source of ground water.

Resting directly on the bedrock in the Coastal Plain region is the Raritan Formation of

Upper Cretaceous age (Sections I through VI). The basal member of this formation, the Raritan Fire Clay, is a weathering product of the Triassic shale and as such is confined mainly to areas underlain by shale, although some material may have washed onto the Precambrian surface to the southeast. Undoubtedly much of the bedrock surface is covered by a clayey material which is a weathering product of the underlying rock. Above the fire clay are the two most productive aquifers in the study area, the Farrington and Old Bridge Sands. As can be seen on the cross sections, both these units are continuous beneath the Coastal Plain southeast of their respective outcrop areas. The Woodbridge Clay is also persistent throughout the subsurface in the Coastal Plain and is the main confining unit separating the Farrington and Old Bridge Sands. The Sayreville Sand and South Amboy Fire Clay, which occur stratigraphically between the Woodbridge Clay and Old Bridge Sand are, however, thin and discontinuous and are absent in Sections III and V. Only in Section I do the two formations extend for any considerable distance. Due to limited occurrence and fine-grained nature, the Sayreville Sand has a very small potential for water-supply development. Northeast of Spotswood the individual members of the Raritan Formation, in particular, the Farrington and Old Bridge Sands and Woodbridge Clay, are distinguishable in well logs as they retain their outcrop type lithologies. However, in the Jamesburg area the Woodbridge Clay appears to contain a larger proportion of sand and the clay is lenticular rather than a continuous sheet. This makes separation of the Farrington and Old Bridge into distinct units somewhat difficult. For continuity, the names Farrington and Old Bridge are extended to the county line, although further southwest this distinction may no longer be possible.

The Amboy Stoneware Clay, which previously had been considered to be the upper unit of the Raritan Formation, is now interpreted as being the basal member of the Magothy Formation [9] and is so indicated on the cross sections. The formations above the Raritan (i.e. Magothy, Merchantville, etc.) have little importance as major water producers in the study area. The Magothy, Merchantville, Woodbury, and Marshalltown Formations are chiefly clays, silts, and fine-grained sands with little capacity to transmit or yield useable quantities of water. The Englishtown Formation and Wenonah Sand are relatively permeable units, but have limited occurrence in Middlesex County. The Pleistocene units are quite permeable in places, but their limited thickness in most areas prevents them from being major aquifers.

As indicated by Sections I and II, a buried diabase ridge lies beneath the Raritan River between Sayreville and Perth Amboy. This ridge stood as a topographic high during Upper Cretaceous time and had a strong effect on Farrington sedimentation. In many places along the axis of the ridge the sand was either thinly deposited or not deposited at all. In addition, during Pleistocene time when sea level was at a lower elevation than at present, the Raritan River cut a channel nearly or completely to bedrock along its lower reaches. This erosional activity removed the thinly deposited Farrington Sand in places and replaced it with Pleistocene and Recent deposits. The net result is that in many places beneath the Raritan River there is no Farrington Sand, and at other spots (Sections I and II), the sand is only a thin deposit on the diabase ridge. In the area of the Washington Canal on Cross Section II, it can be seen that the Woodbridge Clay was either not deposited or later eroded and replaced by Pleistocene de-

posits which directly overlie the Farrington Sand. Originally, relatively impermeable Recent deposits blanketed the Pleistocene materials, but dredging of the Washington Canal exposed the permeable Pleistocene materials directly to the brackish water in the canal and provided an easy route for brackish water to eventually move downward into the Farrington Sand. In the southern part of the study area near Jamesburg and especially along the Millstone River at the county border, erosional and depositional activity during Pleistocene time has removed considerable amounts of the Upper Cretaceous material, replacing it with Pleistocene sand, gravel and clay deposits up to 100 feet thick.

On each of the sections, the potentiometric surface of the Farrington Sand is shown. The depressions in the Farrington water-level surface on Sections I through III are the result of heavy pumping from the sand in this area. Section VI shows the area southwest of Jamesburg to be only slightly affected by this pumping, and Sections IV and V support this conclusion. On Section VI, northeast of Spotswood, two major depressions in the water-level surface of the Farrington Sand can be seen between Runyon and South Amboy again corresponding to areas of heavy pumping.

The hydrogeologic sections were based on geologists' logs, interpretations of drillers' logs, geologic maps, and geophysical logs obtained from the files and reports of the New Jersey Bureau of Topography and Geology, and the U. S. Geological Survey. The potentiometric surface of the Farrington Sand was determined from data supplied by the U. S. Geological Survey and represents field measurements taken in the fall of 1973. Topography was taken from the U. S. Geological Survey's 7 1/2 minute quadrangles. Many well logs exist in the Coastal Plain region of Middlesex County, but more deep test wells are needed in the southeastern part of the study area to better define the geology.

Withdrawing large quantities of water in excess of natural replenishment, however, produces a decline in water levels as water is taken from storage, which in turn may lead to salt-water intrusion in coastal zones. As the eastern portion of the Farrington Sand is experiencing large head declines and locally, salt-water intrusion, removing additional ground water from storage within the aquifer in that area would not be recommended. Instead a more widely distributed pumping network might be required to eliminate excessive drawdowns in the coastal zone and to utilize the large ground-water reserves. More detailed recommendations for ground-water management techniques in both the Coastal Plain and Triassic Lowland are given in a later section of the report.

EFFECT OF THE PROPOSED CRAB ISLAND RESERVOIR ON GROUND-WATER SUPPLIES OF THE FARRINGTON AND OLD BRIDGE SANDS

A tidal dam has been proposed on the Raritan River downstream from Crab Island. The proposed reservoir surface would be 7.5 feet above mean sea level. The purpose of the reservoir is for flood protection, water supply, and recreation. The reservoir would prevent salt water from moving with the tides of the Raritan River, Washington Canal, and South River recharge areas of the aquifers. It would raise fresh-water heads in the aquifers, thereby lowering the potential for salt-water intrusion. It is hoped that the reservoir would act to recharge water to the aquifers in response to ground-water pumpage. Water from the reservoir could also be used for artificial recharge of the aquifers.

The effect of the proposed reservoir on ground-water supplies in both the Farrington and Old Bridge Sands was studied by Remson and Fungaroli [7] of the U.S. Geological Survey

REFERENCE NO. 16

Uncontrolled Hazardous Waste Site Ranking System

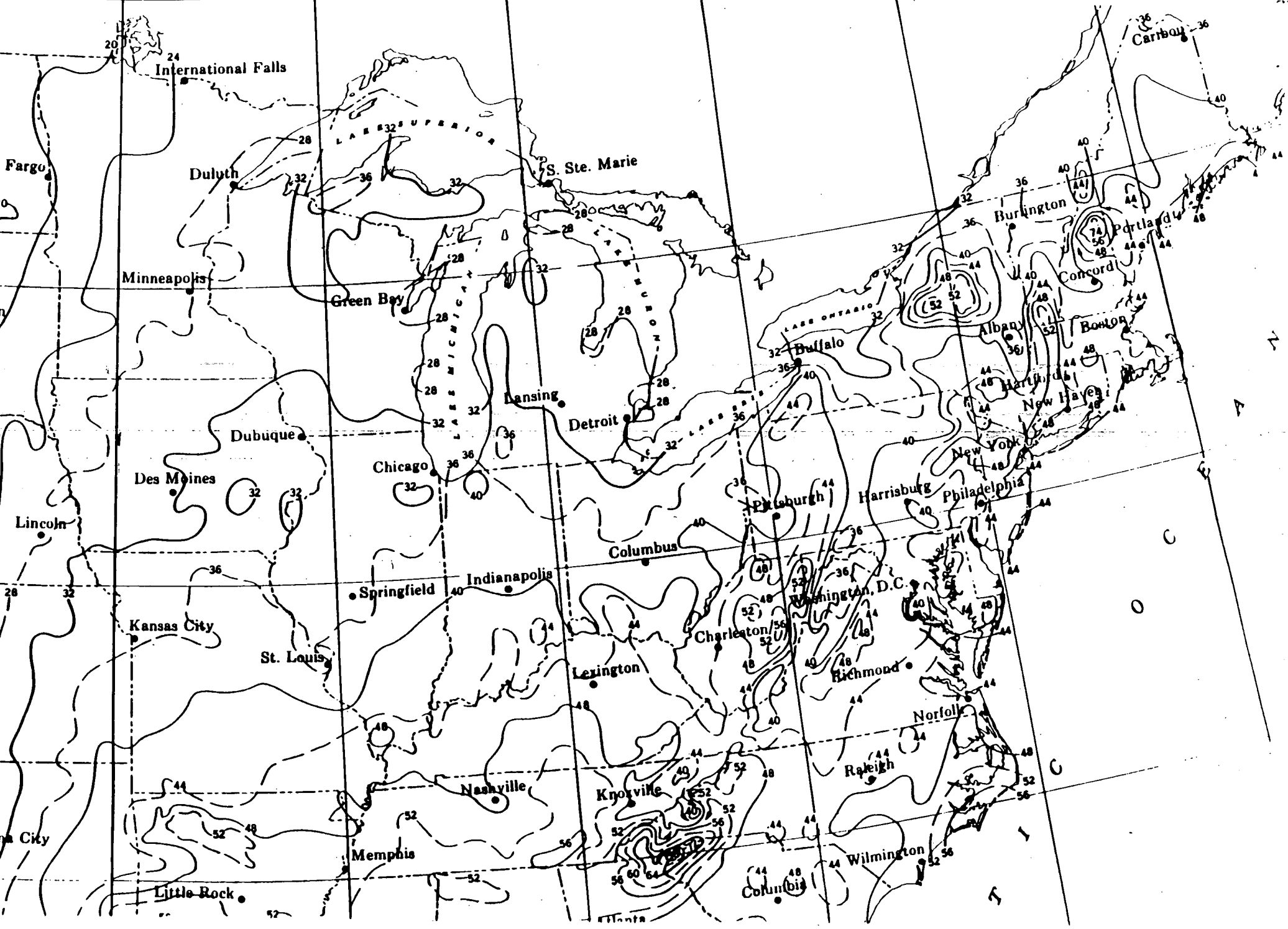
A Users Manual
(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

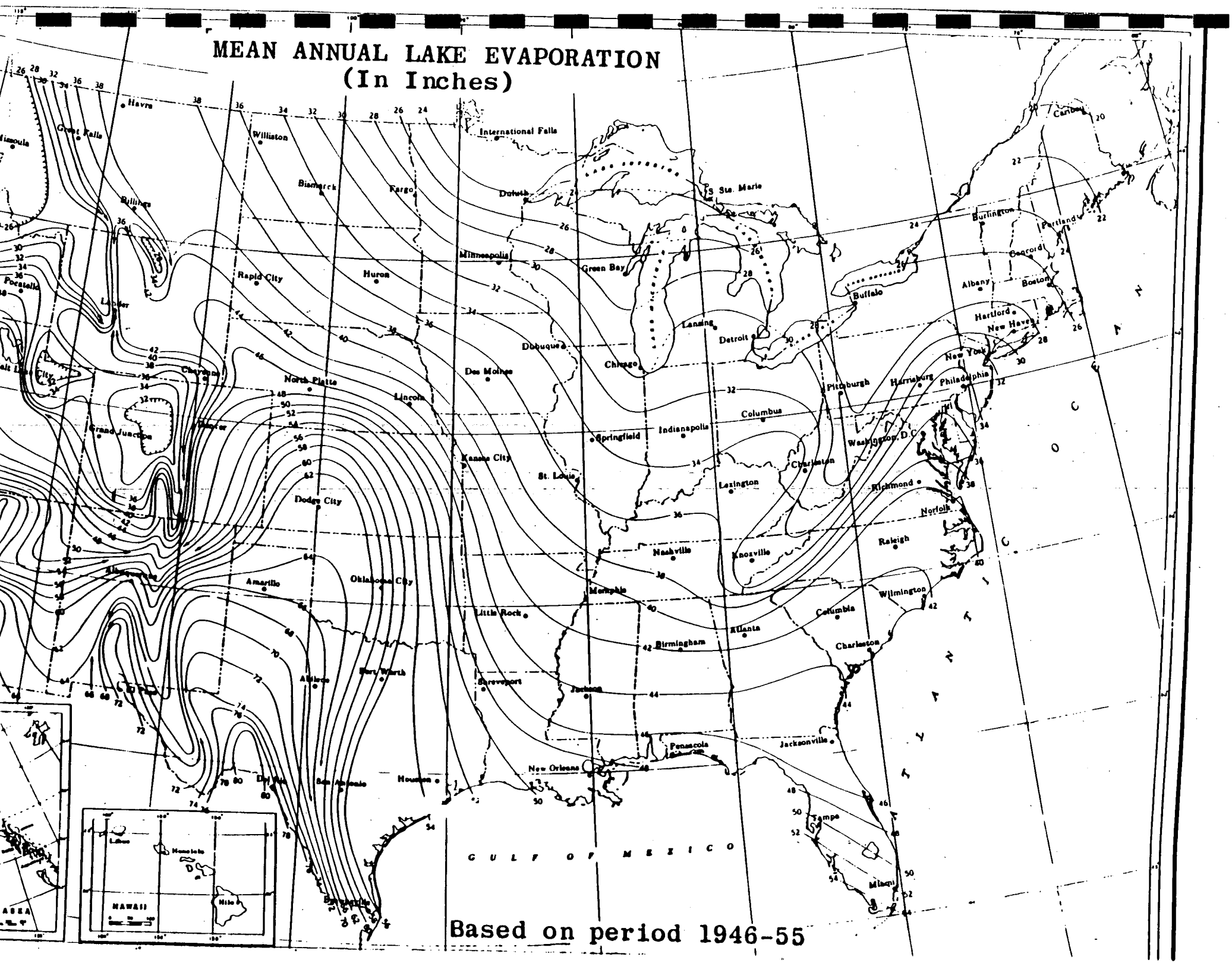
United States
Environmental Protection
Agency

1984

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

1 YEAR 24-HOUR RAINFALL (inches)

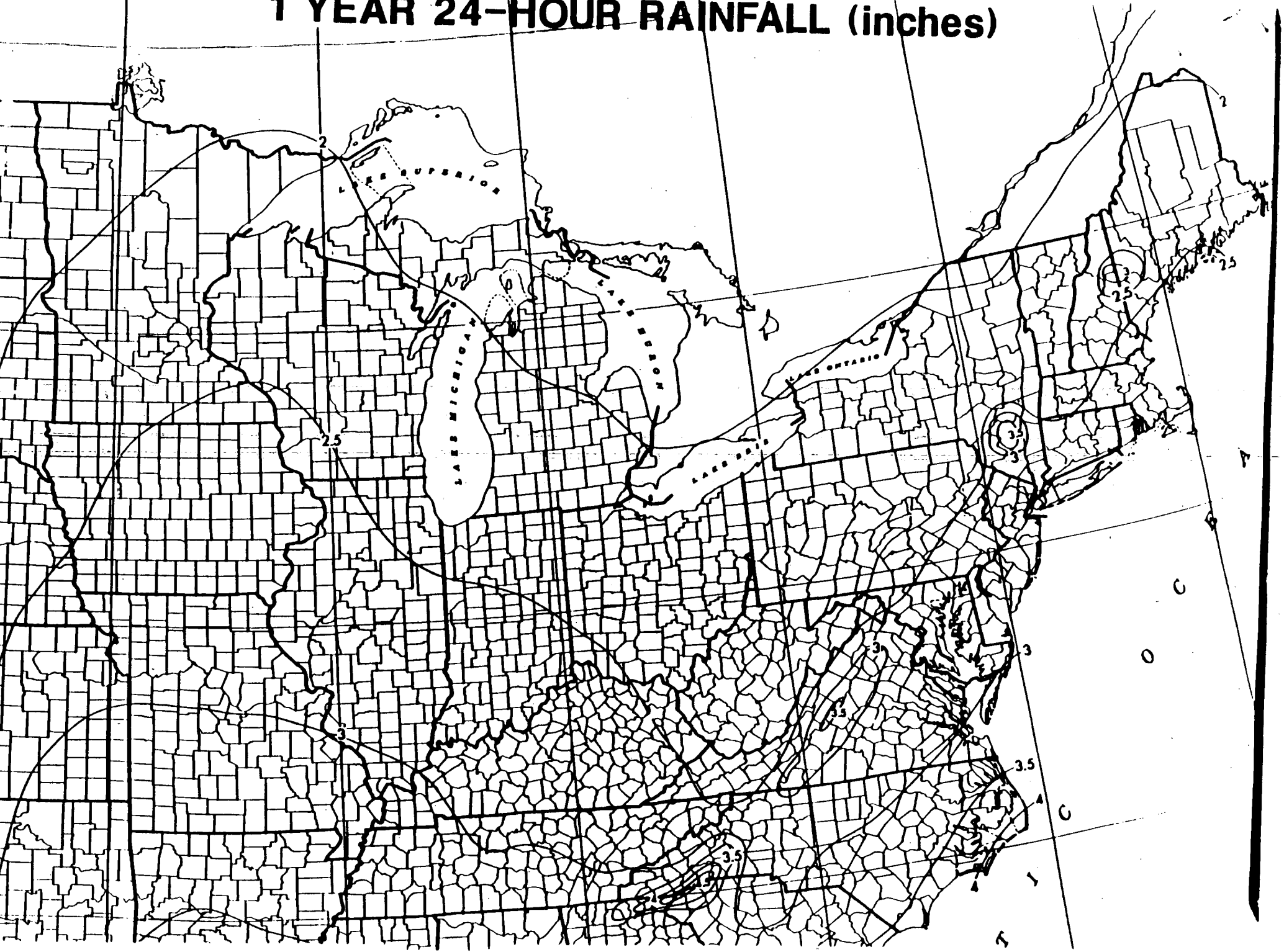


TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

REFERENCE NO. 17

MR. S. OKULEWICZ

Geological Investigations of the Coastal Plain of Southern New Jersey

Part 2:

A. Hydrogeology and the Coastal Plain

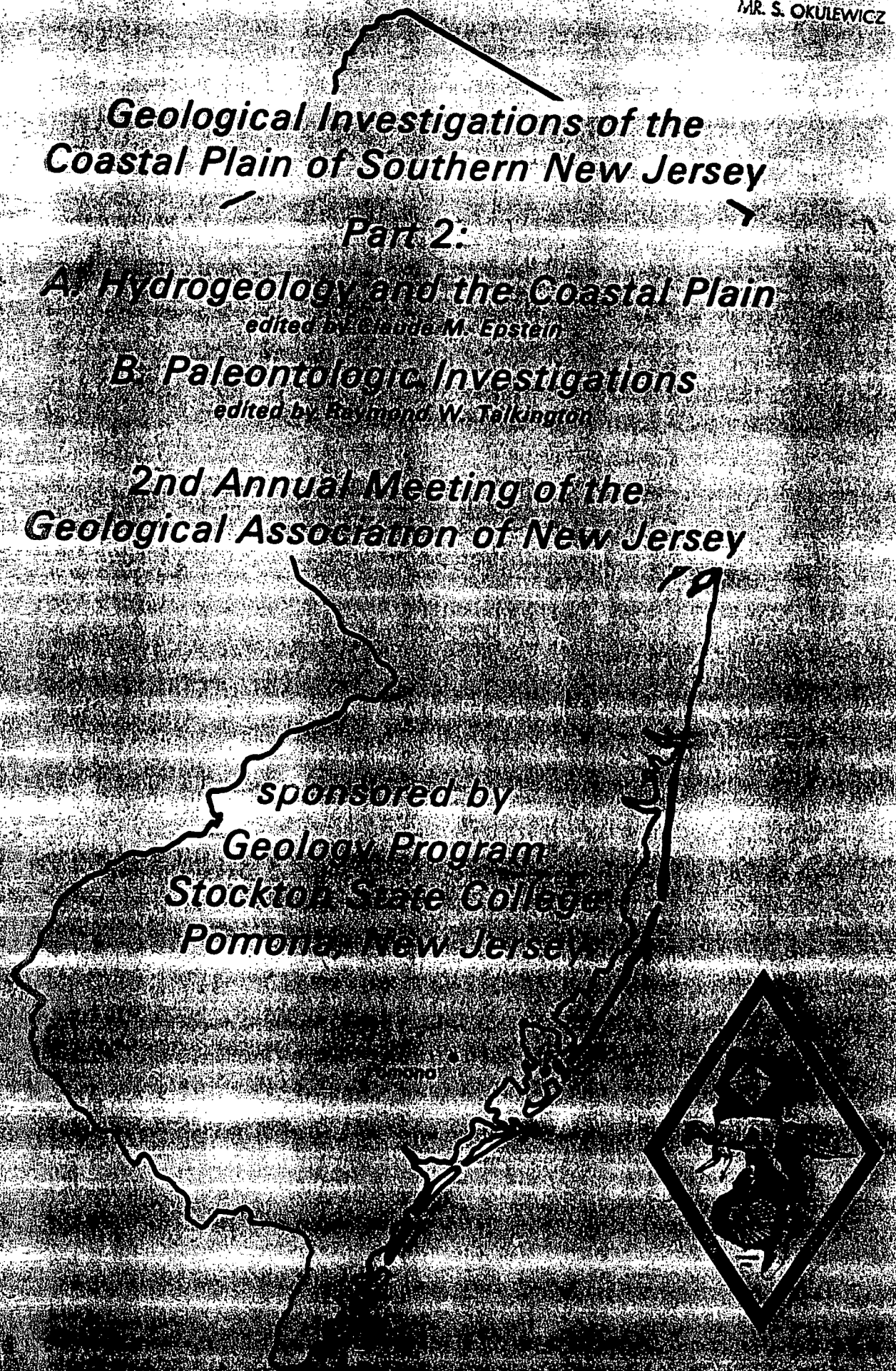
edited by Claude M. Epstein

B. Paleontologic Investigations

edited by Raymond W. Talkington

2nd Annual Meeting of the Geological Association of New Jersey

sponsored by
Geology Program
Stockton State College
Pomona, New Jersey



SUMMARY OF STUDIES ON THE HYDROGEOLOGY OF SALTWATER INTRUSION IN THE POTOMAC-RARITAN-MAGOTHY AQUIFER SYSTEM, CENTRAL NEW JERSEY--1926-85

By Amleto A. Pucci, Jr.
U.S. Geological Survey
West Trenton, NJ 08628

ABSTRACT

Saltwater intrusion of the Potomac-Raritan-Magothy-aquifer system is occurring in two areas of Middlesex and Monmouth Counties in central New Jersey. As part of a 5-year study, the U.S. Geological Survey, in cooperation with the New Jersey Geological Survey, is investigating the hydrogeology and saltwater intrusion in both areas.

A chronology of the occurrence of the saltwater intrusion problem indicates that saltwater was first noticed in the middle aquifer in 1926. Previous reports identified the Washington Canal and Raritan and South Rivers as sources of the saltwater. The Palisades sill is known to be an important factor affecting the migration of saltwater into the Farrington, or middle, aquifer, although the extent and location of the sill are not well defined. Little information is available on the hydrogeology of, and intrusion of saltwater from Raritan Bay into the Old Bridge, or upper, aquifer in Monmouth County.

Current data-collection programs include marine seismic geophysics, borehole and observation-well drilling, surface geophysics, and aquifer tests. Specifically, the programs will (1) delineate the extent of the Palisades sill in the area of intrusion in Middlesex County, (2) define the sediment units in the estuarine waterways and beneath Raritan Bay, and (3) ascertain the source locality of saltwater intrusion into the upper aquifer.

INTRODUCTION

Saltwater intrusion of the Potomac-Raritan-Magothy aquifer (PRMA) system is occurring in two areas of central New Jersey. In the area of Sayreville, and South River Boroughs and South Amboy City of Middlesex County, saltwater intrusion was first noticed in 1926 (Fairbanks, H.G., written commun. to Meredith Johnson, New Jersey State Geologist, 1936). In the area of Keyport and Union Beach Boroughs, saltwater intrusion was first noticed in 1970 (Schaefer and Walker, 1981). A chronology of the occurrence of these problems appears in table 1.

Excessive ground-water withdrawals from the middle and upper aquifer units of the PRMA system have accompanied the residential, commercial, and industrial development of these areas. These withdrawals have caused water levels to decline below sea level and the reversal of ground-water flow paths.

Table 1.--A chronology of events and references on saltwater contamination of the Farrington and Old Bridge aquifers in Middlesex and Monmouth Counties

Event or Reference	Source
1885, Wells were drilled on the "Bank of the Raritan" by the Sayre & Fisher Brick Company of Sayreville.	H.G. Fairbanks (1936).
1926-1928, Raritan Copper Company wells in Perth Amboy detected chloride concentrations up to 236 ppm in wells in Sayreville, New Jersey. First documentation of salt water contamination in the Farrington aquifer.	
1930, Sayre & Fisher Brick Company abandons one well because of saltwater concentrations. Three other wells at the site were not contaminated with saltwater.	
1931, Washington Canal deepened to 12 feet, likely increasing hydraulic connection between saltwater and the Farrington aquifer.	
1933, Sayre & Fisher Brick Company-abandons remaining wells in the Farrington because of saltwater contamination.	
1936, Saltwater intrusion of the Farrington aquifer in the Sayreville, South Amboy, and South River area was first investigated.	H. C. Barksdale (1937).
1940, It was presented that further dredging of the Raritan River, South River, and Washington Canal would lead to further saltwater movement into the Farrington aquifer.	Meredith Johnson, State Geologist, written commun. (1940)
1943, Chloride concentrations were reported for selected wells in the Farrington aquifer. The potential for saltwater intrusion into the Old Bridge aquifer was discussed.	H. C. Barksdale, and and others (1943).

Table 1.--A chronology of events and references on saltwater contamination of the Farrington and Old Bridge aquifers in Middlesex and Monmouth Counties--Continued

1943, In an effort to contain the problem of saltwater intrusion, limitations on ground-water withdrawals from the Farrington aquifer in Middlesex County were proposed.	
1943 and 1958 chloride concentration contours showed saltwater intrusion progressing into the Farrington aquifer.	C. A. Appel (1962).
1962, A tidal dam was proposed as a means of containing potential saltwater intrusion.	
1963, The effects of canal and river channel dredging on saltwater intrusion into the Farrington aquifer were examined using analog methods.	Irwin Remson and C. A. Appel, U.S. Geological Survey, written commun. 1963.
1969, To prevent saltwater intrusion into the Farrington aquifer, a freshwater reservoir was proposed at Crab Island in the Raritan River.	Irwin Remson and A. A. Fungaroli, U.S. Geological Survey, written commun. 1969.
1970, Saltwater encroachment into the Old Bridge aquifer was first reported in the vicinity of Keyport and Union Beach.	F. L. Schaefer and R. L. Walker (1981).
1985, Because of the threat of saltwater encroachment the New Jersey Department of Environmental Protection designated the Farrington and Old Bridge aquifers as "Critical Management Areas".	J. W. Gaston (1985).

Because of the reversal of the original ground-water flow paths, previous ground-water discharge areas in the estuarine regions of the Raritan and the South Rivers and Raritan Bay Basin have become recharge areas. Saltwater recharge from these water bodies has encroached into the two areas of the region's most important fresh ground-water source (fig. 1.).

Saltwater contamination also occurs north of the Raritan River in the Farrington aquifer outcrop from Woodbridge Creek. Saltwater maybe entering the Old Bridge aquifer where the South River and Raritan River flow over its outcrop (Schaefer, 1983). A discussion of these areas is not included in this paper because they do not pose a threat to major well fields. The migration of saltwater from these areas has been limited because of their location outside the narrow cones of depression in the unconfined region of the outcrops, and because of the countering effects of fresh, surface artificial recharge (Appel, 1962a).

As part of a 5-year investigation of the water resources of the Potomac-Raritan-Magothy aquifer system, the U.S. Geological Survey, in cooperation with the New Jersey Geological Survey (NJGS) has begun an investigation of the intrusion problems in the two areas of primary concern (fig. 1). Migration of the saltwater into the aquifer system will be simulated using a digital transport model. In order to improve the model's accuracy, the hydrogeology throughout the regional aquifer system will be refined. This will be especially important in the marine and estuarine areas, which have become the sources of the saltwater intruding into the regional aquifer system. This model will be used as a tool for understanding the intrusion process. The model results may be used by New Jersey Department of Environmental Protection (NJDEP) in its management of the water resources in these areas.

This paper presents a general description of the hydrogeology of the PRMA system in Middlesex and Monmouth counties of central New Jersey, and it describes the occurrence of the problem of saltwater intrusion in the two problem areas. Information which is being used to refine the hydrogeologic details is described separately for both intrusion areas. Finally, project efforts to interpret this information and to collect more information through a field program are summarized.

HYDROGEOLOGIC SETTING

The Potomac-Raritan-Magothy aquifer system within the New Jersey Coastal Plain has been divided into three aquifers: the upper, middle, and lower. However, the lower aquifer is absent in the study area. In the study area, the middle and upper aquifers are commonly known as the Farrington and Old Bridge aquifers (table 2). For historical consistency, the latter terminology will be used in this paper. The PRMA system is composed of Cretaceous unconsolidated clay, silt, sand, and gravel. These sediments form alternating beds of clay and

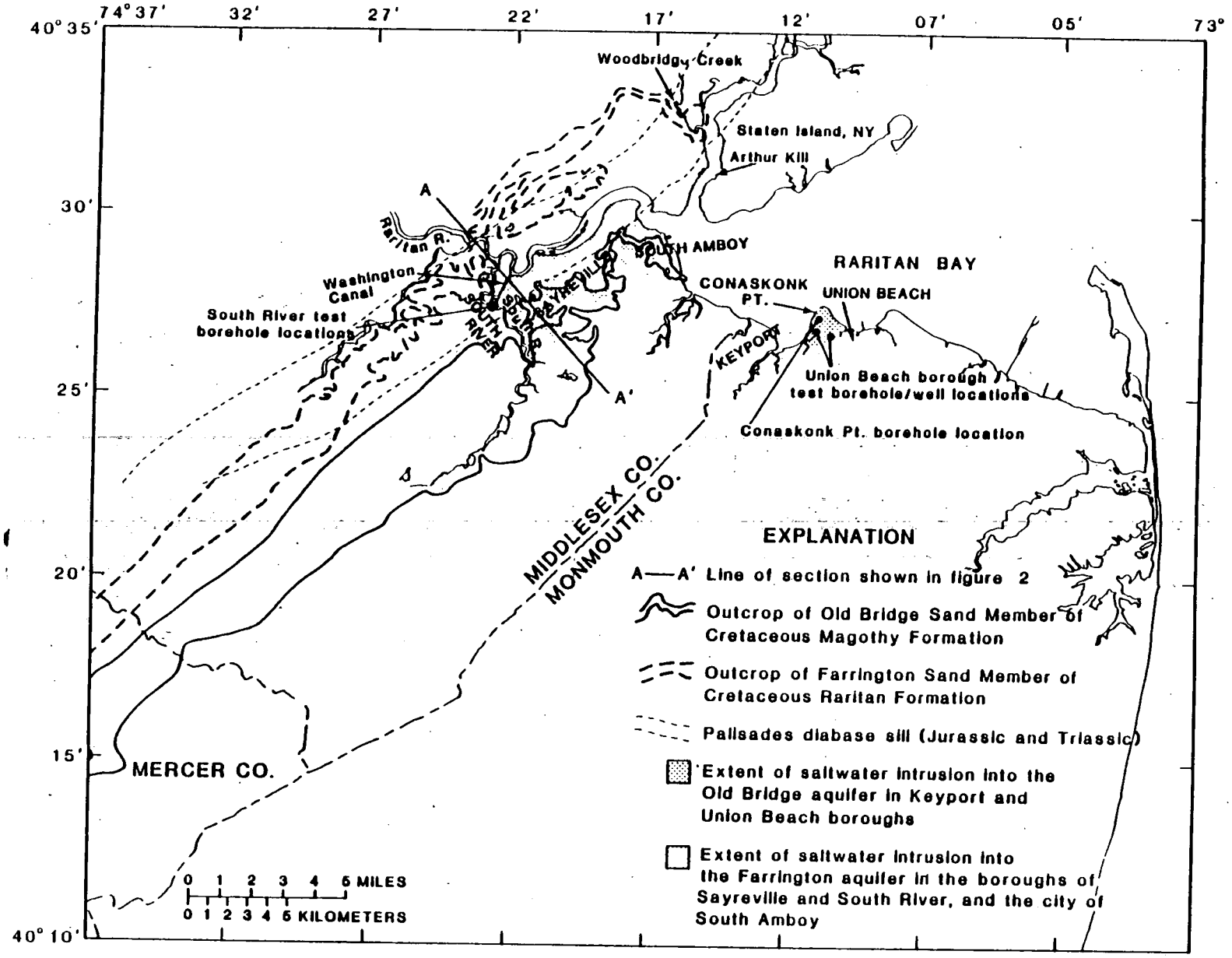


Figure 1.--Location of areas of saltwater contamination in Middlesex and Monmouth counties in New Jersey.

Table 2.--Geologic and hydrogeologic units in study area 1

System	Geologic units			Hydrogeologic units	
Cretaceous	Woodbury Clay			Merchantville-Woodbury confining bed	
	Merchantville Formation				
	Magothy	Formation	Cliffwood beds		Confining bed
			Morgan beds		
			Amboy Stoneware Clay member		
			Old Bridge Sand Member		
	Raritan	Formation	South Amboy Fire Clay Member	Potomac-Raritan-Magothy aquifer system	Old Bridge aquifer 2
			Sayreville Sand Member		
			Woodbridge Clay Member		Confining bed
			Farrington Sand Member		Farrington aquifer 2
			Fire clay member		Confining bed
Jurassic and Triassic	Newark Supergroup and diabase intrusives			Bedrock	Bedrock
Lower Paleozoic and Precambrian	Igneous and metamorphic rocks				

1 Modified after O. Zapecza, 1984.
2 Using revised nomenclature, the Old Bridge aquifer is now known as the upper aquifer, the Farrington aquifer is now known as the middle aquifer as noted in this paper. The lower aquifer is not mappable within the area of concern for this paper.

sand that generally strike northeast-southwest and thicken as a wedge southeasterly from a featheredge at the outcrop to more than 1,000 feet in southeastern Monmouth County (Zapecza, 1984).

The Farrington aquifer, which consists of the Farrington Sand Member of the Raritan Formation, overlies a crystalline rock basement in the western part of the study area and the Raritan Fire Clay downdip of the outcrop area. In areas near its outcrop, the Farrington Sand Member also overlies the diabase Palisades sill (figures 1 and 2). The member consists of sands and gravels with clay lenses. The Farrington aquifer thickens from 50 feet in and near its outcrop to about 100 to 125 feet in the southeastern part of the study area (Zapecza, 1984). In the study area, the aquifer is overlain by the Woodbridge Clay Member of the Raritan Formation. Locally, this micaceous silt and clay confining bed includes sand and clay lenses of the Sayreville Sand and the South Amboy Fire Clay Members of the Raritan Formation (Farlekas, 1979). The confining-bed thickness increases from less than 50 feet in the outcrop area to more than 150 feet farther downdip in this area (Zapecza, 1984).

The Old Bridge aquifer, generally, is equivalent to the Old Bridge Sand Member, the basal unit of the Magothy Formation. Locally, where the South Amboy Fire Clay member of the Raritan Formation is thin or missing, the Old Bridge aquifer may include the Sayreville Sand Member as shown in figure 2 (Farlekas, 1979). The aquifer is composed of medium sands locally interbedded with clayey silts (Farlekas, 1979). From the outcrop, the unit thickens to about 125 feet downdip at a depth of 700 to 800 feet below sea level in the southeastern part of the study area. Localized interbedded sand, silt, and clay sequences pinch out and interfinger with the overlying confining bed downdip (Zapecza, 1984).

The Merchantville-Woodbury confining bed overlies the PRMA system throughout the study area. Zapecza (1984) described it as the most extensive confining bed in the New Jersey Coastal Plain. The confining bed thickness ranges from about 100 feet in the study area to approximately 300 to 350 feet toward the east (Zapecza, 1984).

Detailed discussions of geologic characteristics and stratigraphy of the Raritan and Magothy Formations and overlying Coastal Plain deposits are in Barksdale and others (1943), Gill and Farlekas (1976), and Zapecza (1984).

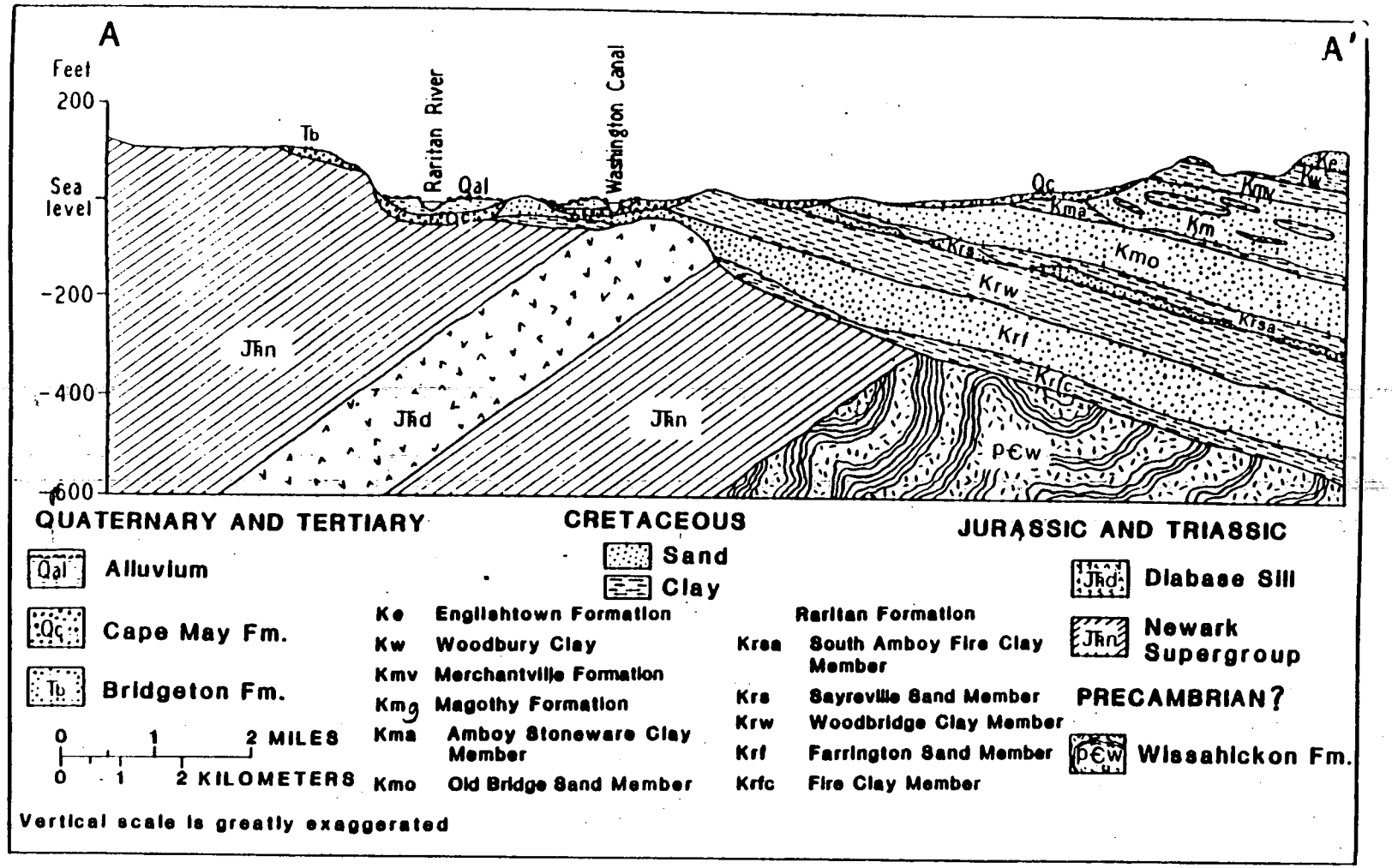


Figure 2.--Generalized geologic section along trace A-A' in figure 1.

PREVIOUS INVESTIGATIONS IN THE VICINITY OF SAYREVILLE, AND SOUTH RIVER BOROUGHS, AND THE CITY OF SOUTH AMBOY

Unpublished test-borehole data resulting from commercial development has provided most of the hydrogeologic information in the Boroughs of Sayreville, and South River and the city of South Amboy for this investigation. The earliest information comes from the pits that were dug into the clay beds near the South River and Raritan River. Meredith Johnson compiled U.S. Army Corps of Engineers (USACE) and New Jersey Department of Transportation test borings in the South and Raritan Rivers (M. Johnson, unpublished worksheets on file at NJDEP, 1925-40). Johnson's worksheets show that the Farrington aquifer pinches out against the Palisades diabase sill in some locations near the estuary waterways.

Barksdale and others (1943), reported on the regional hydrogeology and ground-water supply. His report included an areal delineation of the extent of the Palisades sill. Subsequent analysis on the extent and the depth of the sill from borings and well records was done by Steven Whitney of the NJGS (Whitney, S., New Jersey Geological Survey, written commun., 1969). An aeromagnetic survey of this area by the U.S. Geological Survey (1979) may indicate that the sill is present further to the west than previously determined by either Whitney or Barksdale.

Two projects proposed by the USACE in the 1960's concerned the hydrogeology of this area. The first was a proposal to dam the South River and form a freshwater reservoir (U.S. Army Corps of Engineers, 1962). Appel (1962) prepared a preliminary report for this project that included data on the permeability properties and distribution of the alluvium along the South and Raritan Rivers. Another study examined the potential effects of continued dredging of the rivers by the USACE (Appel, U.S. Geological Survey, written commun., 1962). This study shows the extent and location of the Farrington aquifer, and the confining alluvium above and the confining Palisades sill below the aquifer. The study also shows that the areal distribution of the chloride migration pattern is a function of both the sediment permeability beneath the estuary waterways and the irregular aquifer thickness. Table 3 summarizes the hydrogeologic data for this area.

Table 3.--Data sources for the investigation of the hydrogeology of the Farrington aquifer in the Sayreville, South Amboy, and South River area

Data Description	Data Source
Geologists' logs prepared from test borings in the Raritan River, South River, and the Washington Canal for proposed bridges.	Technical reports prepared for the Army Corps of Engineers by Meredith Johnson, NJGS (unpublished worksheets, no date).
Geologists' logs and geologic cross sections prepared for the New Jersey Department of Transportation, and various industrial projects in the Sayreville, South Amboy, and South River area.	Professional records of Meredith Johnson on file at the NJGS from 1925-40.
Drillers' logs and lithologic data from foundation studies for utility projects in areas of Middlesex County.	Miscellaneous boring series along proposed sewer pipelines for Middlesex Co. Utility Authority.
Geologists' logs prepared for the New Jersey Department of Transportation near Raritan River.	Jon Lovegreen, (1974).
Geologists' logs prepared from test borings in the Raritan and South Rivers. A discussion of the distribution of these sediments is given. Hydraulic conductivities of river sediments were measured.	C. A. Appel (1962).
A data base, containing well records, lithologic, and geologic information maintained by the U.S. Geological Survey.	USGS, Watstore 1975, Ground-Water file.
Miscellaneous data pertaining to permitted wells on file at New Jersey Department of Environmental Protection.	The well records at the New Jersey Department of Environmental Protection.

Table 3.--Data sources for the investigation of the hydrogeology of the Farrington aquifer in the Sayreville, South Amboy, and South River area--Continued

Contour maps of the top of the Palisades sill prepared from geologists' logs in the area of Sayreville, South River, and Perth Amboy.	Unpublished worksheets prepared by Steven Whitney, 1969, NJGS.
Uninterpreted aeromagnetic survey of central New Jersey and Delaware which indicates the location of the Palisades sill.	USGS (1979).

Saltwater contamination of 236 ppm (parts per million) was first reported for the Farrington aquifer in 1926 (Fairbanks, H. G., written commun. to Meredith Johnson, New Jersey State Geologist, 1936). The first investigations of the problem were done in the 1930's by Barksdale and others (1943). Their work showed the presence of saltwater in the Farrington aquifer southeast of the Washington Canal and south of the Raritan River, principally near the outcrop in the vicinity of the Boroughs of Sayreville, and South River and City of South Amboy in Middlesex County (fig. 1). Johnson (unpublished worksheets of the State Geologist from the period 1925-40, on file at New Jersey Department of Environmental Protection) identified a direct hydraulic connection between the salty surface water in the estuarine waterways and the underlying fresh ground water. Schaefer (1983) prepared graphs of chloride concentrations from wells in this area for the years 1965-81. His analyses indicate that saltwater concentrations were increasing, which indicates that saltwater is continuing to move from its source into the aquifer. In 1983, a chloride concentration of 2200 ppm was measured in a well approximately 2 miles southeast of the Washington Canal (U.S. Geological Survey, 1983, p. 311)

In an effort to minimize saltwater intrusion into the Farrington aquifer, both Barksdale (1936) and Johnson (unpublished worksheets on file at NJDEP, 1925-40) proposed constraints to the development of the area's water resources. Johnson recognized that proposed dredging of the alluvium from the channels of the Raritan River, the South River, and the Washington Canal would cause more saltwater to move into the Farrington aquifer. Barksdale proposed limiting ground-water withdrawals from the Farrington and Old Bridge aquifers in this area. These limitations would leave the ground-water system in equilibrium with natural recharge. The concerns of restricted ground-water development and careful management of the resource are reflected in the policies adopted by the NJDEP in 1985. Both aquifers have been designated by the Bureau of Water Allocation and the Division of Water Resources, NJDEP, as "Critical Water Supply Areas" (Gaston, 1985).

PREVIOUS INVESTIGATIONS IN THE VICINITY OF KEYPORT AND UNION BEACH BOROUGHS

Lithologic data and borehole geophysical data in this area have been recovered from the well-record archives at NJDEP, from records of borings for municipal projects, and from the U.S. Geological Survey data base (Murashige, J.E. and others, U.S. Geological Survey, written commun., 1985). Schaefer and Walker (1981) reported on the hydrogeology of the area; however, their analysis did not include hydrogeologic information from Raritan Bay. Based on the altitude of the top of the Old Bridge aquifer (from well logs in Middlesex and Monmouth Counties), they predicted that a submerged outcrop of the aquifer in Raritan Bay was the source of saltwater intrusion in this area.

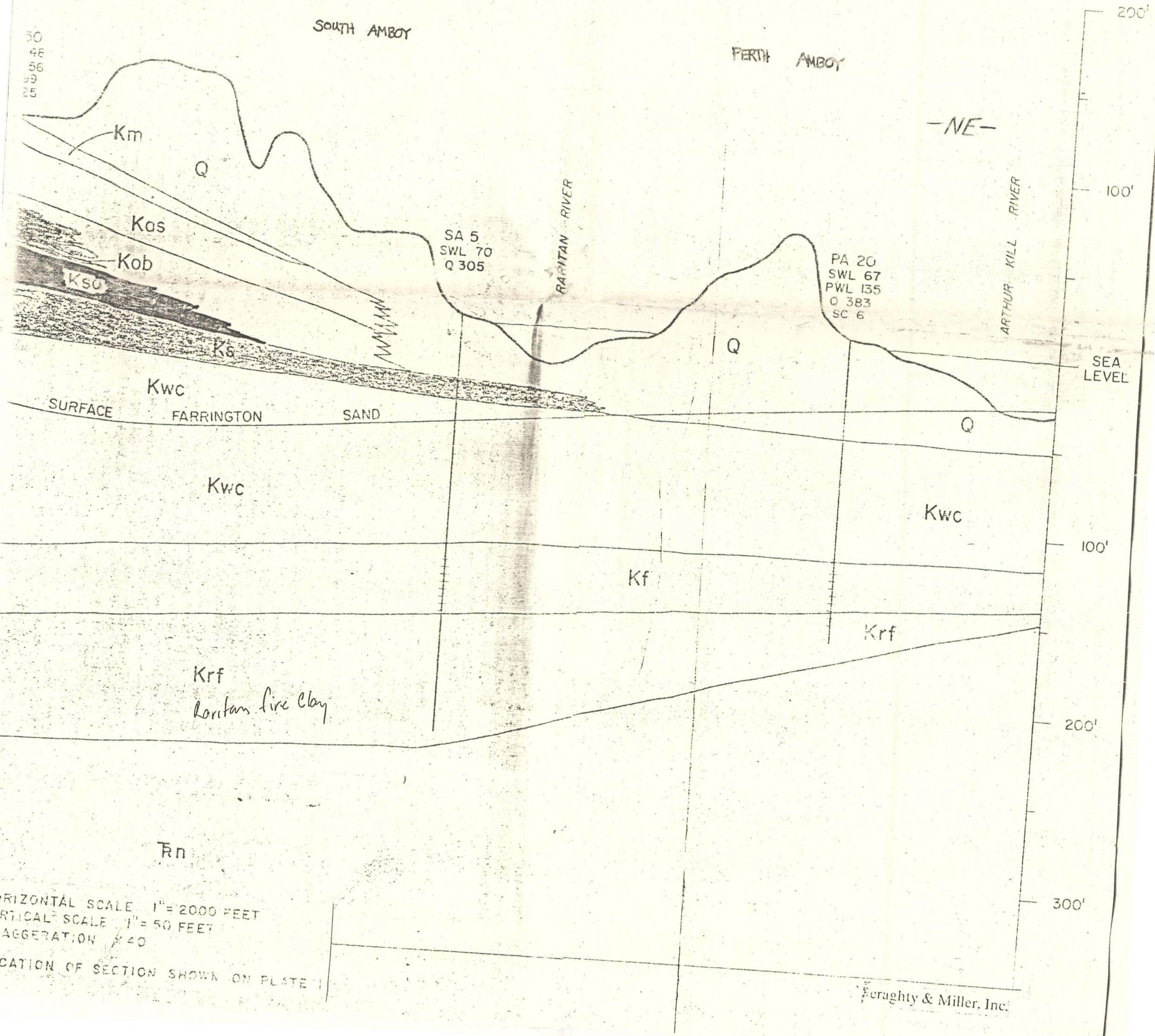
REFERENCE NO. 18

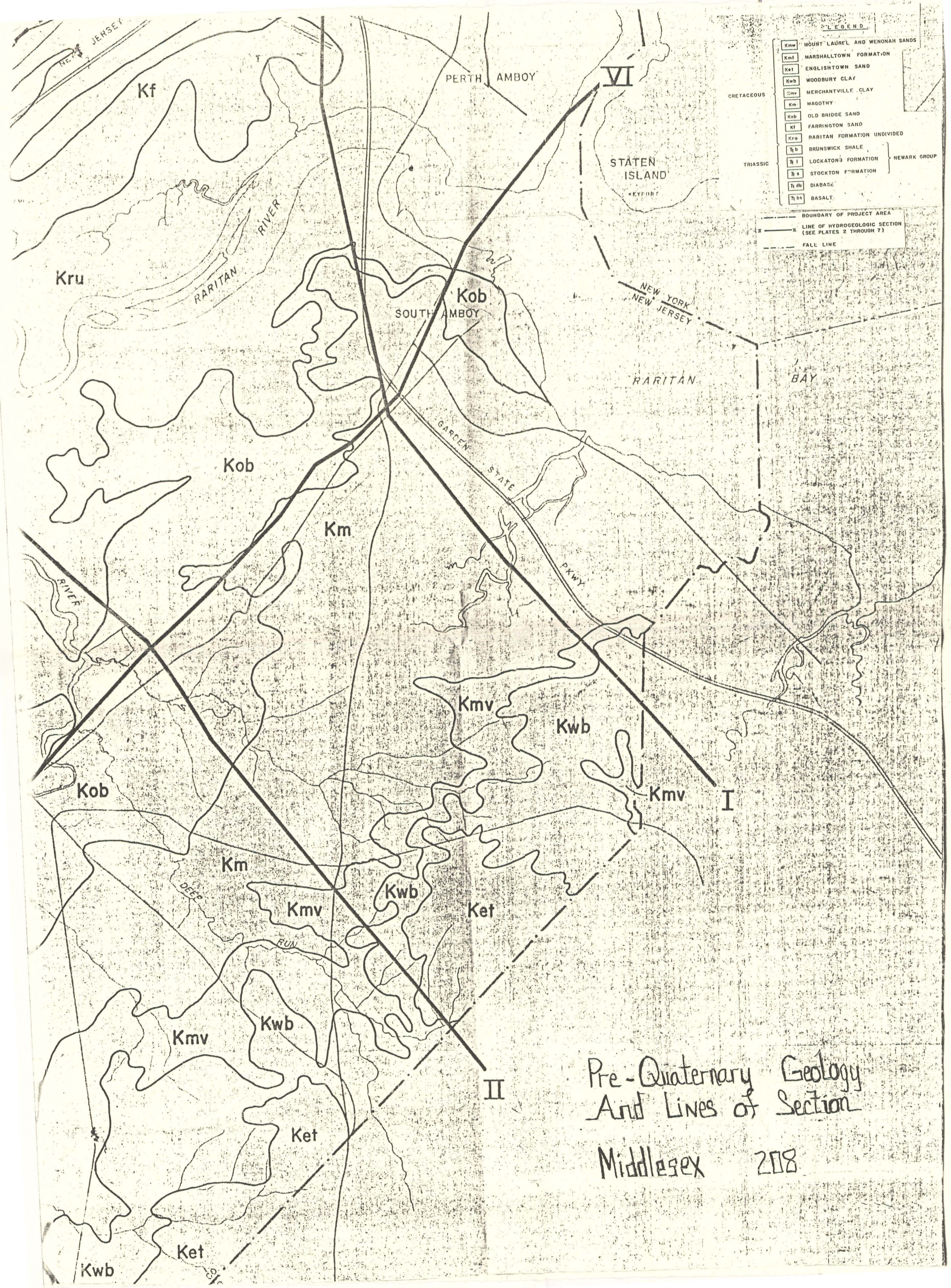
PLATE 7

HYDROGEOLOGIC SECTION VI

EXPLANATION OF ABBREVIATIONS

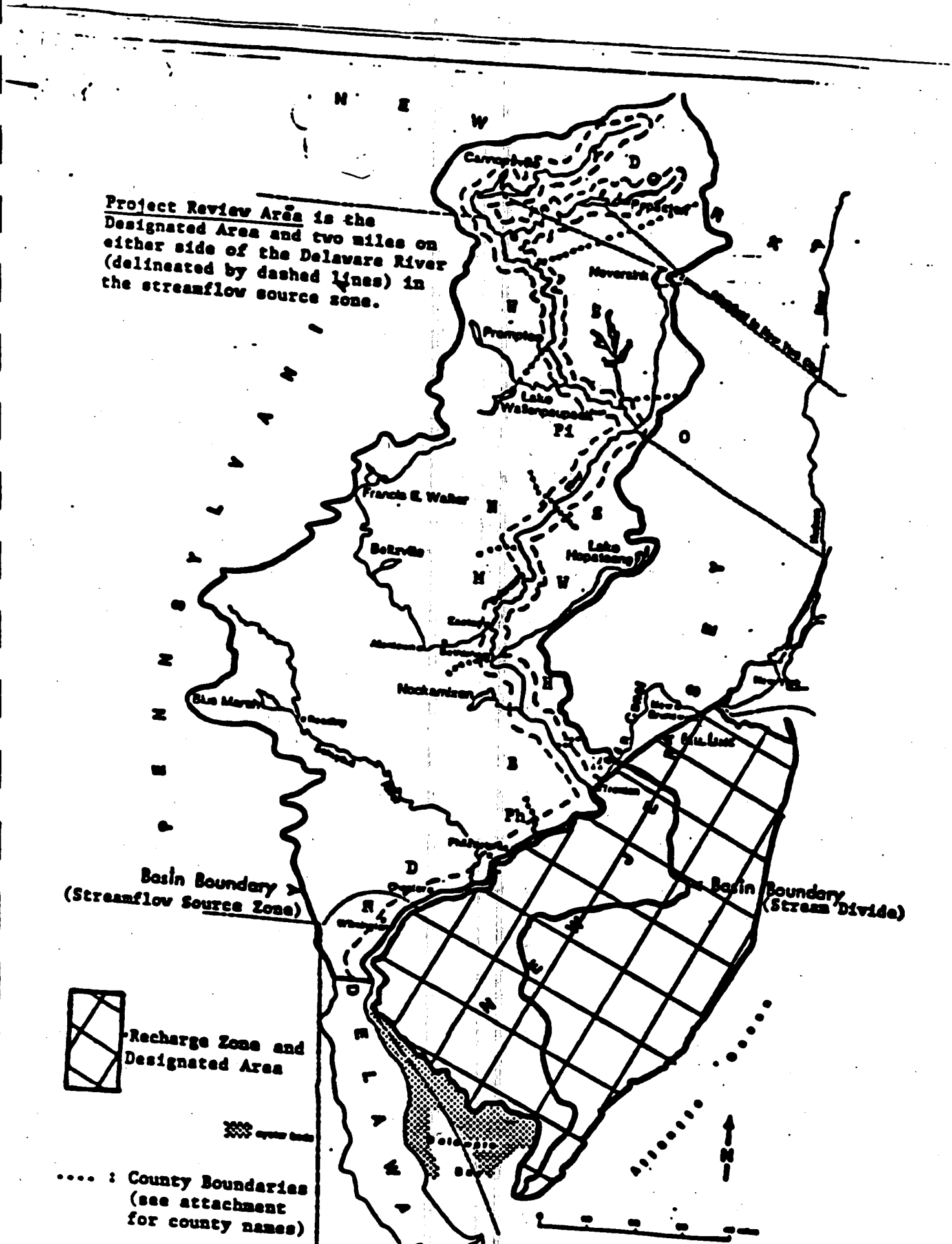
Kmv	MERCHANTVILLE CLAY	RARITAN FM.
Km	MAGOTHY FORMATION	RARITAN FM.
Kas	AMBOY STONEWARE CLAY	RARITAN FM.
Kob	OLD BRIDGE SAND	RARITAN FM.
Ksa	SOUTH AMBOY FIRE CLAY	RARITAN FM.
Ks	SAYREVILLE SAND	RARITAN FM.
Kwc	WOODBRIDGE CLAY	RARITAN FM.
Kf	FARRINGTON SAND	RARITAN FM.
Krf	RARITAN FIRE CLAY	RARITAN FM.
Q	QUATERNARY	
Ꞧb	BRUNSWICK SHALE	NEWARK GROUP Ꞧn
Ꞧl	LOCKATONG FORMATION	NEWARK GROUP Ꞧn
Ꞧs	STOCKTON FORMATION	NEWARK GROUP Ꞧn




LEGEND
CRETACEOUS
Kmw MOUNT LAUREL AND WENONAH SANDS
Kmt MARSHALLTOWN FORMATION
Ket ENGLISHTOWN SAND
Kwb WOODBURY CLAY
Kmv MERCHANTVILLE CLAY
Km MAGOTHY
Kob OLD BRIDGE SAND
Kf FARRINGTON SAND
Kru RARITAN FORMATION UNDIVIDED
TRIASSIC
Ꞧb BRUNSWICK SHALE
Ꞧl LOCKATONG FORMATION
Ꞧs STOCKTON FORMATION
NEWARK GROUP
Ꞧdb DIABASE
Ꞧbs BASALT
BOUNDARY OF PROJECT AREA
II LINE OF HYDROGEOLOGIC SECTION (SEE PLATES 2 THROUGH 7) II
FALL LINE
NEW JERSEY
Kf
PERTH AMBOY
VI
STATEN ISLAND
KEYPORT
RARITAN RIVER
Kru
Kob
SOUTH AMBOY
NEW YORK
NEW JERSEY
RARITAN BAY
GARDEN STATE PKWY
Kob
Km
RIVER
Kmv
Kwb
Kob
Kmv
I
Km
DEEP RUN
Kwb
Kmv
Ket
Kwb
Kmv
II
Ket
Ket
Kwb
Pre-Quaternary Geology
And Lines of Section
Middlesex 208

SOLE SOURCE AQUIFERS IN REGION II

Name	State	Citation	Publication Date
Nassau/Suffolk	NY	43 FR 26611	06/21/78
Buried Valley Aquifer System (AS)	NJ	45 FR 30357	05/08/80
Ridgewood Area	NJ	49 FR 2943	01/24/84
Upper Rockaway River Basin	NJ	49 FR 2946	01/24/84
Brooklyn/Queens	NY	49 FR 2950	01/24/84
Schenectady/Niskayuna	NY	50 FR 2022	01/14/85
Clinton Street-Ballpark AS	NY	50 FR 2025	01/14/85
Cattaraugus Creek AS	NY	52 FR 36100	09/25/87
Highlands AS	NJ/NY	52 FR 37213	10/05/87
Cortland-Homer-Preble AS	NY	53 FR 22045	06/13/88
Northwest New Jersey Fifteen Basin AS	NJ/NY	53 FR 23685	06/23/88
New Jersey Coastal Plain AS	NJ	53 FR 23791	06/24/88


Project Review Area is the Designated Area and two miles on either side of the Delaware River (delineated by dashed lines) in the streamflow source zone.
Basin Boundary (Streamflow Source Zone)
Basin Boundary (Stream Divide)
Recharge Zone and Designated Area
.... : County Boundaries (see attachment for county names)
Francis E. Walter
Lake Hopatcong
Nockamixon
Blue Marsh
Pi
Ph
D
N
O
M
W
H
B
S
E
Y
N
E
W
D
Y
O
R
K
P
E
N
N
S
Y
L
V
A
N
I
A
D
E
L
A
W
A
R
E
N
E
W
J
E
R
S
Y
N
E
W
Y
O
R
K
N

completely and since the aquifer in this area is solely or principally relied upon for drinking water purposes by the population of the New Jersey Coastal Plain Area, contamination of the aquifer could pose a significant hazard to public health.

III. Description of the New Jersey Coastal Plain Area Aquifer System, Its Recharge Zone and Its Streamflow Source Zone

The New Jersey Coastal Plain Aquifer System consists of a wedge-shaped mass of unconsolidated sediments composed of clay, silt, sand and gravel. The wedge thins to a feathered edge along the Fall Line and attains a thickness of over 8,000 feet at the tip of Cape May County, New Jersey.

These sediments range in age from Cretaceous to Holocene and can be classified as continental, coastal or marine deposits. There are five major aquifers within the Coastal Plain Aquifer System. They are the Potomac-Raritan-Magothy Aquifer System, Englishtown Aquifer, Wenonah-Mount Laurel Aquifer, Kirkwood Aquifer and the Cohansey Aquifer. Natural recharge to the New Jersey Coastal Plain Aquifer System occurs primarily through direct precipitation on the outcrop area of the geologic formations. A smaller component of natural recharge to the deeper layers of the system occurs by vertical leakage from the upper layers. This accounts for a small percentage of the total amount of recharge; however, over a large area and a long period of time the amount of water transmitted can be significant.

The New Jersey Coastal Plain Aquifer discharges to the surface through streams, springs and evapotranspiration. Many streams ultimately flow into bays or directly into the ocean. Development of the ground-water reservoir as a water supply source constitutes another discharge component which today accounts for a significant portion of discharge from the overall system. In certain areas (e.g. along the Delaware River) heavy pumping has caused a reversal in the normal discharge from the aquifer (Raritan-Magothy) such that the surface stream (Delaware River) now recharges the aquifer. This phenomenon implies that, in addition to the New Jersey Coastal Plain Area, the Delaware River Basin within Delaware, New Jersey, Pennsylvania and New York must be regarded as a streamflow

IV. Information Utilized in Determination

The information utilized in this determination includes the petition, written and verbal comments submitted by the public, and various technical publications. The above data are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Region II, Water Management Division, 26 Federal Plaza, New York, New York 10278.

V. Project Review

When the EPA Administrator publishes his determination for a sole or principal drinking water source, no commitment for Federal financial assistance may be may if the Administrator finds that the Federally-assisted project may contaminate the aquifer through a recharge zone so as to create a significant hazard to public health . . . Safe Drinking Water Act section 1424(e), 42 U.S.C. 300h-3(e). In many cases, these Federally-assisted projects would also be analyzed in an "Environmental Impact Statement" (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. 4332(2)(C). All EISs, as well as any other proposed Federal actions affecting an EPA program or responsibility, are required by Federal law (under the so-called "NEPA/308" process) to be reviewed and commented upon by the EPA Administrator. Therefore, in order to streamline EPA's review of the possible environmental impacts on designated aquifers, when an action is analyzed in an EIS, the two reviews will be consolidated, and both authorities will be cited. The EPA review (under the Safe Drinking Water Act) of Federally-assisted projects potentially affecting sole or principal source aquifers, will be included in the EPA review (under the "NEPA/308" process) of any EIS accompanying the same Federally-assisted project. The letter transmitting EPA's comments on the final EIS to the lead agency will be the vehicle for informing the lead agency of EPA's actions under section 1424(e).

All Federally-assisted proposed projects will be reviewed within the New Jersey Coastal Plain Area (Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland and Cape May, and portions of Mercer and Middlesex Counties, New Jersey (as delineated on maps included in the petition), and that portion of the streamflow source zone which lies within two miles of the Delaware River in the States of New Jersey (in Mercer, Hunterdon, Sussex and Warren Counties), Delaware (in New Castle County), Pennsylvania (in Delaware, Philadelphia, Bucks, Monroe, Northampton, Pike and Wayne Counties) and New York (in Delaware, Orange and Sullivan Counties) (as delineated on maps included in the public record). Outside the New Jersey Coastal Plain Area and further than two miles from the Delaware River in the streamflow source zone, only those Federally-assisted proposed projects requiring the preparation of an EIS will be reviewed. The Agency has chosen a two-mile limit for the project review area along the Delaware River based on the climate and hydrologic setting of the area. The two-mile distance is consistent with the two-mile review radius included in the EPA guidelines for Ground-Water Classification and is protective of human health.

VI. Summary and Discussion of Public Comments

There has been much controversy over the possible designation of this aquifer system. The majority of the comments from the original 1979 public hearings were in direct opposition to such a designation. More than half of all responses received were against designation. Several commenters felt constrained by the original comment period and thereby requested an extension. EPA complied with this request on two occasions, once by announcing at the four public hearings it held throughout the area under consideration that the agency had extended the formal comment period from May 14, 1979, to December 31, 1979, and again in a May 19, 1983 Federal Register Notice that announced the availability of additional information and extension of the public comment period to July 15, 1983. Although a number of ground-water protection measures are available at the Federal, State and local level, none of these, either individually or collectively, permit EPA to act as directly as would a sole source aquifer designation in the review and approval of Federally-assisted projects. In addition, EPA feels that the sole source project review process will foster integration rather than duplication of environmental review efforts. Memoranda of Understanding have

REFERENCE NO. 20

LISTING OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
MIDDLESEX COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGITU	HW ACC	ALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
230521	402023074[illegible]4001	402023	743740		PLAINSBORO TWP	COLUMBIAN CARBN	WELL 1	/ /	W	N	N	S
230522	402342074[illegible]2001	402413	742641		SPOTSWOOD BORO	SCHWEITZER, P J	11	10/14/1978	W	N	N	S
230523	403217074[illegible]4101	403217	741641		PERTH AMBOY CITY	STANLEY CORP	2	06/16/1977	W	N	N	T
230524	403218074[illegible]1901	403218	741617		PERTH AMBOY CITY	BIRD & SONS	2	10/08/1979	W	N	N	T
230525	402050074[illegible]1601	402056	743608		PLAINSBORO TWP	FORRESTAL LABS	7	/ /	W			S
230526	402207074[illegible]1301	402207	743013		S BRUNSWICK TWP	DOW JONES CO	1	01/01/1962	W	C	C	S
230527	402302074[illegible]4201	402302	743342		S BRUNSWICK TWP	COLUMBIAN CARBN	10-1962	02/10/1951	W	N	N	S
230528	402447074[illegible]2001	402447	743320		S BRUNSWICK TWP	GULF OIL CO	ABAN	/ /	U	U	U	S
230529	402451074272801	402448	742730		E BRUNSWICK TWP	KOBE JAPANESE REST	GAS LITE RES	/ /	W	I	U	S
230530	402518074330901	402519	743309		S BRUNSWICK TWP	BRUNSWICKTWN WC	BWC 8	12/02/1959	W	P	P	S
230531	402522074313001	402552	743130		S BRUNSWICK TWP	BRUNSWK RUBBER	2-1961	/ /	W	N	N	S
230532	402526074341401	402526	743414		S BRUNSWICK TWP	BRUNSWICKTWN WC	BWC 9	02/08/1960	W	P	P	S
230533	402528074313801	402528	743138		S BRUNSWICK TWP	FLAGPOST INN	1	/ /	W	H	H	S
230534	402536074211802	402536	742018		OLD BRIDGE TWP	PERTH AMBOY W D	OLD DEEP 8	/ /	W	P	P	S
230535	402547074330501	402547	743305		S BRUNSWICK TWP	BRUNSWICKTWN WC	BWC 7	08/20/1959	W	P	P	S
230536	402620074301501	402620	743015		N BRUNSWICK TWP	JOHNSON&JOHNSON	WATER TANK	/ /	W	N	N	S
230537	402645074202001	402645	742620		MILLTOWN BORO	BARATTA BUILDER	HOUSE WELL	/ /	W	H	H	S
230538	402734074192501	402734	741925		SAYREVILLE BORO	E I DUPONT	2-OBS	/ /	O	U	U	S
230539	402820074264701	402820	742647		NEW BRUNSWICK CITY	RODIE RUBBER CO	1	/ /	W	N	N	S
230540	403000074264401	403000	742644		N BRUNSWICK TWP	JOHNSON&JOHNSON	1	/ /	W	N	N	S
230541	403231074151801	403231	741518		WOODBRIDGE TWP	SHELL OIL CO	44	/ /	W	N	N	S
230542	403232074152201	403232	741522		WOODBRIDGE TWP	SHELL OIL CO	2(28)	/ /	W	N	N	S
230543	403242074152301	403242	741526		WOODBRIDGE TWP	SHELL OIL CO	5(S2)	/ /	O	N	U	S
230544	403243074152801	403242	741531		WOODBRIDGE TWP	SHELL OIL CO	4(S1)	/ /	Z	N	U	S
230545	403243074153301	403243	741533		WOODBRIDGE TWP	SHELL OIL CO	5	/ /	W	N	N	S
230546	403249074153801	403249	741538		WOODBRIDGE TWP	SHELL OIL CO	9	/ /	W	N	N	S
230547	403250074153401	403250	741534		WOODBRIDGE TWP	SHELL OIL CO	3	/ /	O	N	U	S
230548	403257074153901	403257	741539		WOODBRIDGE TWP	SHELL OIL CO	8(R7)	/ /	O	N	U	S
230549	402746074314503	402745	741645		SAYREVILLE BORO	SAYREVILLE W D	SWD R	05/01/1980	W	P	P	F
230550	403537074272001	403537	742720		DUNELLEN BORO	A C PRINTING CO	5	08/31/1950	W	C	C	S
230551	402557074212501	402548	742155		SOUTH RIVER BORO	SOUTH RIVER W D	SRWD 6	03/01/1980	W	P	P	S
230552	402018074302102	402018	743021		S BRUNSWICK TWP	S BRUNSWICK MUA	15	05/01/1979	W	P	P	S
230553	401950074275001	401950	742750		MONROE TWP	MONROE TWP MUA	TEST 16	07/17/1980	Z	U	U	S
230554	402738074155901	402745	741545		SAYREVILLE BORO	SAYREVILLE W D	SWD 5	04/21/1980	W	P	P	S
230555	401958074281901	402010	742811		MONROE TWP	MONROE TWP MUA	TEST 17	07/25/1980	W	U	P	S
230556	401950074272101	401950	742721		MONROE TWP	MONROE TWP MUA	TW-16A	10/09/1980	Z	U	U	S
230557	392833074163701	402533	741637		SAYREVILLE BORO	SOUTH AMBOY W D	SAWD 9A	09/21/1979	W	P	P	F
230558	403220074192001	403220	741920		WOODBRIDGE TWP	FUTZ, STEPHEN	1	11/27/1954	W	I	I	T
230559	403420074163301	403420	741633		WOODBRIDGE TWP	SECURITY STEEL	1	02/01/1957	W	N	N	T
230560	403553074152701	403553	741527		WOODBRIDGE TWP	NATIONAL VARNIS	1	01/01/1949	W	N	N	T
230561	403313074160701	403313	741607		EDISON TWP	HOME FOR DIAB V	1	02/01/1957				T
230562	403500074203301	403500	742033		EDISON TWP	NEW DOVER CHURC	1	08/03/1955				T
230563	402527074200701	402527	742007		OLD BRIDGE TWP	PERTH AMBOY W D	1	01/01/1923	W	P	U	T

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
MIDDLESEX COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
230564	402015074311801	402015	743018	S BRUNSWICK TWP	S BRUNSWICK TWP	158-1	06/27/1978	T	U	U	T
230565	401958074291902	401958	742919	MONROE TWP	MONROE TWP MUA	ROBBMORE GC 17	09/14/1980	W	P	P	S
230566	402129074290102	402129	742901	S BRUNSWICK TWP	STAUFFER CHEM	D-2	03/02/1982	O	U	U	T
230567	401950074275002	401950	742750	MONROE TWP	MONROE TWP MUA	MTMUA 16A	07/07/1983	W	P	P	T
230568	402410074223101	402410	742231	SPOTSWOOD BORO	SCHWEITZER, P J	12	02/17/1983	W	N	N	T
230569	402738074170001	402738	741700	SAYREVILLE BORO	SAYREVILLE WD	SWD T	03/25/1982	W	P	P	F
230570	402538074195001	402538	741950	OLD BRIDGE TWP	PERTH AMBOY W D	PERTH AMBOY 6	11/08/1982	W	P	P	F
230571	402528074193801	402528	741938	OLD BRIDGE TWP	PERTH AMBOY W D	PERTH AMBOY 7	03/28/1983	W	P	P	F
230572	402456074215401	402456	742154	E BRUNSWICK TWP	ANHEUSER BUSCH	BUSCH 1	08/17/1983	W	N	N	T
230573	403207074181701	403207	741817	WOODBRIDGE TWP	CIRAKY, NICHOLAS	CIRAKY 1	08/25/1965	W	H	H	S
230574	402737074173601	402737	741736	SAYREVILLE BORO	POWESKA, FRANK	POWESKA 1	06/02/1971	W	H	I	S
230575	402925074170401	402925	741704	SOUTH AMBOY CITY	MCKEON, JOHN	MCKEON 1	10/15/1975	W	H	H	S
230576	402933074171801	402933	741718	SOUTH AMBOY CITY	SPINELLO CONST CO	SPINELLO 1	10/15/1975	Z	U	U	S
230577	403210074152001	403210	741520	PERTH AMBOY CITY	CHEVRON OIL CO	SB-13A	11/05/1981	O	U	U	S
230578	403236074154302	403236	741543	WOODBRIDGE TWP	CHEVRON OIL CO	E15A	11/13/1981	O	U	U	S
230580	402517074205901	402517	742059	OLD BRIDGE TWP	PERTH AMBOY W D	OBS 1	12/20/1954	Z	U	U	T
230581	402734074203701	402734	742037	SAYREVILLE BORO	PARLIN SUPPLY CO	1	06/01/1974	W	H	I	S
230582	402505074212901	402505	742129	OLD BRIDGE TWP	MIDD CO UTIL AUTH	MADISON CONNECT	09/01/1978	W	H	Z	S
230583	402154074293101	402154	742931	S BRUNSWICK TWP	AIR PRODUCTS	AIR PRODUCTS 1	08/24/1978	W	N	N	S
230584	401610074262401	401610	742624	MONROE TWP	TOWN & COUNTRY METAL	SAM CHOY 1	09/04/1978	W	F	F	S
230585	402450074233001	402450	742330	E BRUNSWICK TWP	CHIRLIAN, PAUL	RESERVOIR	11/11/1980	W	Z	Z	S
230586	401943074292601	401943	742926	CRANBURY TWP	PROTINICK, MICHAEL	P	06/20/1981	W	I	I	F
230587	402205074212301	402205	742123	OLD BRIDGE TWP	KOSMO, JOSEPH	KOSMO 1	11/19/1981	W	H	H	S
230588	402129074295701	402129	742957	S BRUNSWICK TWP	STAUFFER CHEM	F-1	[illegible]	O	U	U	S
230589	402129074295401	402129	742954	S BRUNSWICK TWP	STAUFFER CHEM	B-2	[illegible]	O	U	U	S
230590	402721074195701	402721	741957	SAYREVILLE BORO	E I DUPONT	LAYNE ST GAS	[illegible]	O	U	U	F
230591	402655074191601	402655	741916	SAYREVILLE BORO	E I DUPONT	LAYNE SP DBA	[illegible]	O	U	U	F
230592	402659074191001	402659	741910	SAYREVILLE BORO	E I DUPONT	LAYNE SP 3 DRS	08/04/1955	O	U	U	F
230593	402158074191001	402158	741910	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	SS2	05/18/1981	O	U	U	S
230594	402157074191101	402157	741911	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	PW-81 TW1	07/01/1981	O	U	U	S
230595	402153074191501	402153	741915	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	SS4	07/01/1981	O	U	U	S
230596	402154074192201	402154	741922	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	SS3	06/30/1981	O	U	U	S
230597	402148074183001	402148	741830	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	4	03/19/1981	O	U	U	S
230598	402400074254801	402400	742548	E BRUNSWICK TWP	E BRUNSWICK TWP	TW 2-75	07/08/1975	Z	U	U	F
230599	402406074254201	402406	742542	E BRUNSWICK TWP	E BRUNSWICK TWP	TW 1-75	07/03/1975	Z	U	U	F
230600	402538074194801	402538	741948	OLD BRIDGE TWP	PERTH AMBOY W D	GEONICS TW 3	02/01/1973	Z	U	U	F
230601	402537074194601	402537	741946	OLD BRIDGE TWP	PERTH AMBOY W D	GEONICS TW 2	01/24/1973	Z	U	U	F
230602	402536074194901	402536	741949	OLD BRIDGE TWP	PERTH AMBOY W D	GEONICS TW 4	01/24/1973	Z	U	U	F
230603	402543074195101	402543	741951	OLD BRIDGE TWP	PERTH AMBOY W D	GEONICS TW 1	01/19/1973	Z	U	U	F
230604	402203074191301	402158	741909	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	D&Y CO1	01/15/1981	O	U	U	S
230605	402205074191101	402159	741908	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	D&Y CO2	01/14/1981	O	U	U	S
230606	402159074191201	402159	741908	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	D&Y CO3	01/15/1981	O	U	U	S
230607	402154074192401	402154	741924	OLD BRIDGE TWP	OLD BRIDGE DEV CORP	D&Y 2	01/21/1981	O	U	U	S

SELECTED INFORMATION FROM WELLS IN THE GROUND WATER SITE INVENTORY DATABASE
MIDDLESEX COUNTY

USGS UNIQUE ID	WELL DEPTH	AQUIFER CODE	DATA RELIA-BILITY	HYDRO-LOGIC UNIT	DRILLER	MIN CASING DIA	SITE TYPE	NJDEP PERMIT NUMBER	NJDEP GRID NUMBER	WATER ALLOC NUMBE	STAN INDUS USE	LIFT TYPE	TIME PERIOD PUMPED	SPECIFIC CAPACITY	ALTITUDE WATER LEVEL	MU CI CO
230564	164.00	211FRNG	U	02030105	LAYNE NY CO	10.0	W	2810533	2813263			T	0.0	26.55	63.00	21
230565	197.00	211ODBG	C	02030105	SCHULTES, AC	12.0	W	3003081	3014700		4941		0.0	39.33	53.00	13
230566	225.00	211FRNG	C	02030105	HP DRILLERS	4.0	W	2812856	2813353		4941		2.0	8.00	66.10	21
230567	244.00	211ODBG	C	02030105	MORETRENCH C	16.0	W	2813397	2814313		4941	T	24.0	20.81	46.57	13
230568	280.00	211FRNG	C	02030105	LAYNE NY CO	12.0	W	2812880	2804691		2311	T	8.0	39.25	-58.00	24
230569	137.00	211ODBG	C	02030105	SCHULTES, AC	10.0	W	2911861	2901227	00375	4941	T	24.0	21.87	31.00	19
230570	80.00	211ODBG	C	02030105	LAYNE NY CO	16.0	W	2912351	2901419	00375	4941	T	8.0	33.52	6.00	9
230571	82.00	211ODBG	C	02030105	LAYNE NY CO	16.0	W	2912352	2901419	00375	4941	T	8.0	46.80	-1.00	9
230572	60.00	211ODBG	U	02030105	LAYNE NY CO	18.0	W	2813669	2805475	00375	2082	T	8.0	17.50	4.00	4
230573	123.00	211FRNG	C	02030104	BOUND BROOK	7.0	W	2603264	2641242		8811		0.0	0.00	53.00	25
230574	135.00	211FRNG	C	02030104	ENGINEERING	4.0	W	2604398	2641400		4971	S	4.0	0.80	28.00	19
230575	133.00	211FRNG	C	02030105	KAYE CO	4.0	W	2604635	2641529		8811	S	4.0	0.13	-45.00	20
230576	165.00	211ODBG	C	02030104	WHITE A	6.0	W	2604710	2641544		8811	S	4.0	0.10	-18.00	20
230577	57.00	211FRNG	C	02030104	HP DRILLERS	4.0	W	2605321	2631900		8811	S	4.0	0.06	-2.20	16
230578	64.20	211FRNG	C	02030104	HP DRILLERS	4.0	W	2605324	2631900		8811	S	1.0	0.42	-4.00	25
230580	62.00	211ODBG	U	02030105	LAYNE NY CO	3.0	W	2801524	2805435		8811	S	1.0	0.42	11.00	9
230581	44.00	211ODBG	C	02030105	PAINBRIDGE	6.0	W	2808423	2805435		4971	S	4.0	4.29	64.00	19
230582	61.00	211ODBG	C	02030105	SCHULTES, AC	6.0	W	2810495	2805481		8811	S	4.0	4.29	-1.00	9
230583	172.00	211FRNG	C	02030105	LAYNE NY CO	12.0	W	2810515	2813322		2800	S	4.0	6.00	73.00	21
230584	240.00	211ODBG	C	02030105	ENGINEERING	4.0	W	2810626	2814798		3411	S	4.0	0.83	37.50	13
230585	248.00	211FRNG	C	02030105	ENGINEERING	4.0	W	2811899	2804675		4941	S	4.0	0.32	15.00	4
230586	170.00	211ODBG	U	02030105	ENGINEERING	4.0	W	2812332	2813416		4971	S	4.0	0.86	80.00	2
230587	166.00	211ODBG	C	02030105	KAYE CO	4.0	W	2812534	2805773		8811	S	4.0	0.25	30.00	9
230588	238.00	211FRNG	C	02030105	HP DRILLERS	4.0	W	2812875	2813357		8811	S	2.0	8.00	65.00	21
230589	229.00	211FRNG	C	02030105	HP DRILLERS	4.0	W	2812877	2813352		8811	S	2.0	3.20	66.00	21
230590	79.00	211ODBG	U	02030105	LAYNE NY CO	6.0	W	2901391	2901137		8811	S	2.0	7.69	44.00	19
230591	92.75	211ODBG	C	02030105	LAYNE NY CO	3.0	W	2901390	2901117		8811	S	2.0	4.76	47.00	19
230592	98.00	211ODBG	C	02030105	LAYNE NY CO	3.0	W	2901593	2901155		8811	S	2.0	2.38	42.00	19
230593	307.00	211ODBG	C	02030105	SCHULTES, AC	2.5	W	2911116	2911124		8811	S	2.0	2.38	57.00	9
230594	315.00	211ODBG	C	02030105	SCHULTES, AC	12.0	W	2911122	2911124		8811	S	48.0	11.72	-23.00	9
230595	290.00	211ODBG	C	02030105	SCHULTES, AC	2.5	W	2911118	2911124		8811	S	48.0	9.27	6.00	9
230596	294.00	211ODBG	C	02030105	SCHULTES, AC	2.5	W	2911117	2911124		8811	S	2.0	0.17	7.00	9
230597	260.00	211ODBG	C	02030105	SCHULTES, AC	2.5	W	2911107	2911124		8811	S	2.0	0.15	-15.00	9
230598	262.00	211FRNG	U	02030105	SCHULTES, AC	0.0	W	2808314	2804311				0.0	0.00	0.00	4
230599	292.00	211FRNG	U	02030105	SCHULTES, AC	0.0	W	2808913	2804578				0.0	0.00	0.00	4
230600	79.00	211ODBG	U	02030105	SUPERIOR SS	0.0	W	4900027	2804578				0.0	0.00	10.50	9
230601	31.00	211ODBG	U	02030105	SUPERIOR SS	0.0	W	4900028	2804578				0.0	0.00	10.50	9
230602	0.00	211ODBG	U	02030105	SUPERIOR SS	0.0	W	4900029	2804578				0.0	0.00	10.50	9
230603	96.00	211ODBG	U	02030105	SUPERIOR SS	0.0	W	4900025	2804578				0.0	0.00	7.50	9
230604	210.00	211ODBG	C	02030105	SUPERIOR SS	0.0	W	2910992	2904578				0.0	0.00	-11.45	9
230605	47.00	211WBMV	C	02030105	SUPERIOR SS	0.0	W	2910983	2904578				0.0	0.00	99.07	9
230606	53.00	211WBMV	C	02030105	SUPERIOR SS	0.0	W	2910994	2904578				0.0	0.00	109.07	9
230607	177.00	211ODBG	C	02030105	SUPERIOR SS	0.0	W	2911106	2904578				0.0	0.00	10.00	9

REFERENCE NO. 21

NUS CORPORATION AND SUBSIDIARIES **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
02-9001-10	August 30, 1990	2:40

DISTRIBUTION:

File - Celotex (A)

BETWEEN:	OF:	PHONE:
Mr. Garnett	S. Amboy Water Dept.	(201) 721-1211

AND: Bob Cantagallo **(NUS)**

DISCUSSION:

Mr Garnett informed me that J. McKeon receives water from the South Amboy Water Company

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 22

NUS CORPORATION

TITLE: THREE MILE VICINITY MAP

SITE:

CELOTEX (A),
PERTH AMBOY, N.J.

DATE: 01/22/90

TDD: 02-9001-10

QUAD: PERTH AMBOY, N.J.

FIGURE NUMBER:

SCALE: 1"= 2000'

0255
02-9001-

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9001-10	2/21/90	9:15 AM

DISTRIBUTION:
File - Celotex (A)

BETWEEN:	OF:	PHONE:
Richard Muchanic	S. Amboy Water Dept	(201) 721-1211

AND: Maria Coler

DISCUSSION: (NUS)

I called Richard Muchanic back to get information on the two wells maintained by the S. Amboy Water Department. He gave me the following information:

1.) The wells tap the Oldbridge Aquifer Sands at 48 ft.
2.) The well permits numbers are 86-4012 and 86-4078
3.) The population served is 8500
4.) The wells are located at lower Broadway and the Public Works Compound of S. Amboy
5.) The water from the two wells is pumped into a reservoir where it receives pretreatment (PH, disinfection). It is then pumped to water tower where it is mixed with water from Sayreville and Perth Amboy.
6.) In the case that the water from the wells is contaminated, Sayreville and Perth Amboy wells are the alternative sources of water.
7.) A third well is permitted for South Amboy. However this well hasn't been tapped in five years due to high levels of iron. These levels of iron are attributable to the composition of the aquifers.
8.) Mr. Muchanic also told me that he strictly

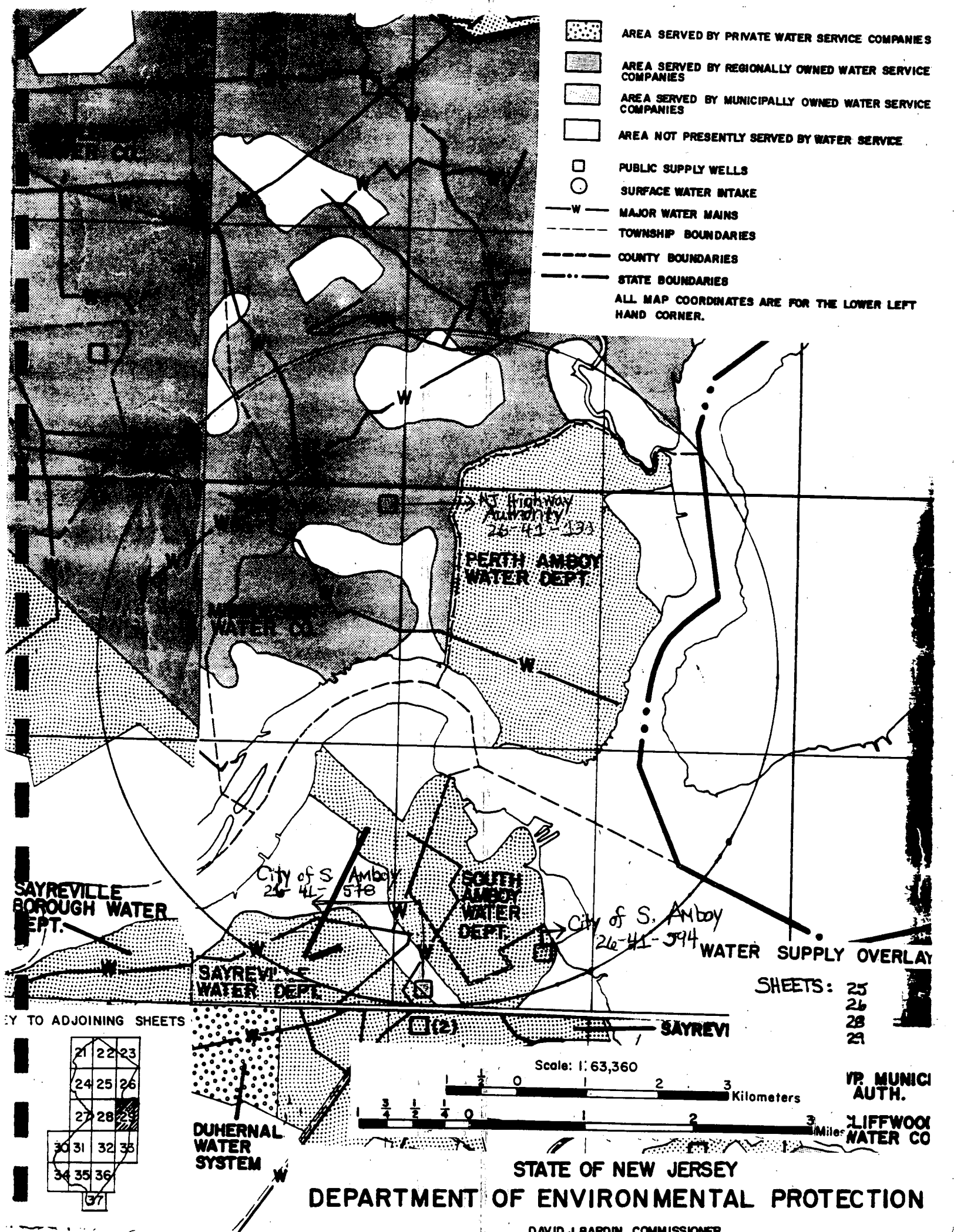
ACTION ITEMS:

NUS 067 REVISED 0581

over

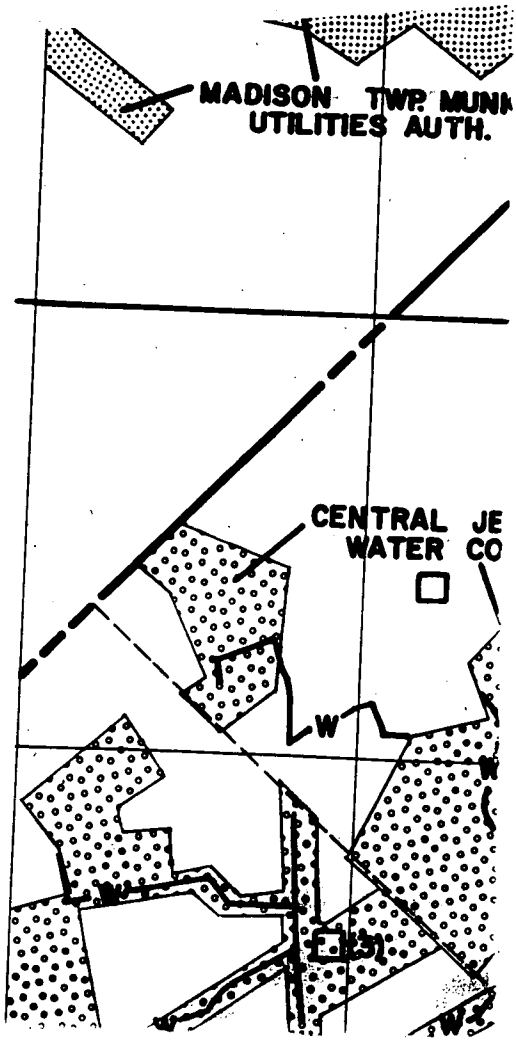
adheres to the NJDEP mandate 208 which requires testing for 16 organics twice a year and inorganics (heavy metals, nitrates) every 2 years. The tests have so far come up negative. He said that his only worry is the possibility of salt water intrusion.

REFERENCE NO. 24


AREA SERVED BY PRIVATE WATER SERVICE COMPANIES
AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES
AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES
AREA NOT PRESENTLY SERVED BY WATER SERVICE
PUBLIC SUPPLY WELLS
SURFACE WATER INTAKE
MAJOR WATER MAINS
TOWNSHIP BOUNDARIES
COUNTY BOUNDARIES
STATE BOUNDARIES
ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER.
NJ Highway Authority 26-41-133
PERTH AMBOY WATER DEPT.
City of S. Amboy 26-41-578
SOUTH AMBOY WATER DEPT.
City of S. Amboy 26-41-594
SAYREVILLE BOROUGH WATER DEPT.
SAYREVILLE WATER DEPT.
DUHERNAL WATER SYSTEM
WATER SUPPLY OVERLAY
SHEETS: 25 26 28 29
Scale: 1:63,360
Kilometers
Miles
STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

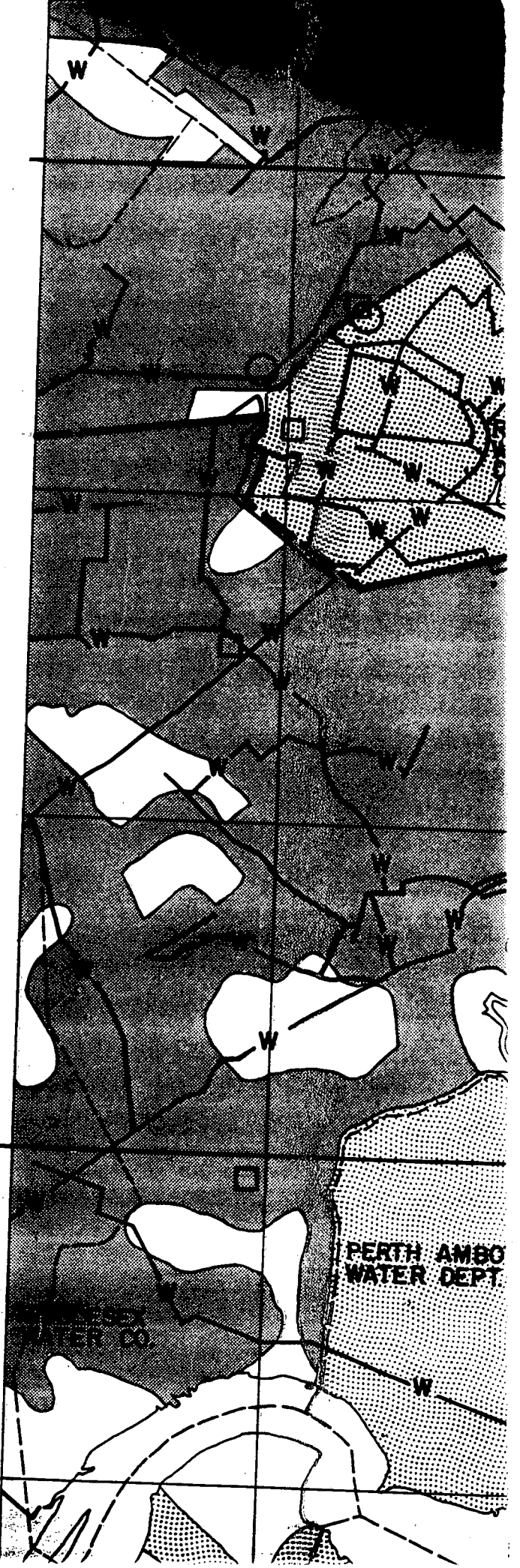
TIONS AND OWNERS OF PUBLIC SUPPLY WELLS

29-01-212	New Jersey Highway Authority
29-01-212	New Jersey Highway Authority
29-01-229	Sayreville Borough
29-01-234	Sayreville Borough
29-01-241	Hope Park Homes, Inc.
29-01-278	Midtown Water Company
29-01-296	N. J. Dept. of Conservation
29-01-356	Lawrence Harbor Water Co.
29-01-398	Matawan Township
29-01-398	Matawan Township
29-01-441	Madison Township Municipal Util. Auth.
29-01-537	Westbury Water Company
29-01-595	Madison Township Board of Education
29-01-629	Matawan Boro
29-01-661	Matawan Boro
29-01-713	Madison Township Municipal Util. Auth.
29-01-731	Madison Township Municipal Util. Auth.
29-01-731	Madison Township Municipal Util. Auth.
29-01-732	Madison Township Board of Education
29-01-732	Browntown Water Company
29-01-732	Browntown Water Company
29-02-273	Keyport Boro
29-02-568	West Keansburg Water Company
29-02-569	West Keansburg Water Company
29-02-615	West Keansburg Water Company
29-02-615	West Keansburg Water Company



[illegible]	[illegible] Co.
[illegible]	[illegible] of Education
[illegible]	[illegible] Essex Fells
[illegible]	[illegible] Essex Fells
[illegible]	[illegible] of Essex Fells
[illegible]	Twp. of Livingston
[illegible]	Twp. of Livingston
[illegible]	Twp. of Livingston
26-11-211	Boro of Essex Fells
26-11-212	Boro of Essex Fells
26-11-213	Boro of Essex Fells
26-11-221	Boro of Essex Fells
26-11-224	Boro of Essex Fells
26-11-225	Boro of Essex Fells
26-11-259	Boro of Essex Fells
26-11-451	Twp. of Livingston
26-11-464	Twp. of Livingston
26-11-546	Rahway Water Dept.
26-11-713	East Orange, City of
26-11-717	East Orange, City of
26-11-717	East Orange, City of
26-11-728	East Orange, City of
26-11-793	City of Orange
26-11-796	City of Orange
26-11-797	City of Orange
26-11-819	City of Orange
26-11-847	City of Orange
26-11-896	Village of South Orange
26-11-933	Orange Water Dept.
26-11-939	City of Orange
26-11-943	Village of South Orange
26-11-945	Village of South Orange
26-11-957	Village of South Orange
26-11-971	Village of South Orange
26-12-194	Town of Montclair
26-12-194	Montclair Water Bureau
26-12-449	City of Orange
26-12-729	Vinton Apartments, Inc.
26-13-226	Hackensack Water Company
26-21-131	City of Orange
26-21-138	Township of Millburn
26-21-155	Short Hills Water Company
26-21-159	Short Hills Water Company
26-21-246	Elizabethtown Water Company
26-21-247	Elizabethtown Water Company
26-21-364	Irvington, City of
26-21-484	Plainfield-Union Water Co.
26-21-491	Elizabethtown Water Company
26-21-538	Union County Park Commission
26-21-573	Plainfield-Union Water Co.
26-21-663	Elizabethtown Water Co.
26-21-834	Plainfield-Union Water Co.
26-22-234	U. S. Navy
26-22-293	New York Port Authority
26-22-449	Elizabethtown Water Company
26-31-243	Rahway, City of
26-31-274	Rahway, City of
26-31-465	Middlesex Water Company
26-41-133	N. J. Highway Authority
26-41-578	City of South Amboy
26-41-594	City of South Amboy

Sheet 26, section 41



AREA NOT PRESENTLY SERVED BY WATER SERVICE

PUBLIC SUPPLY WELLS

SURFACE WATER INTAKE

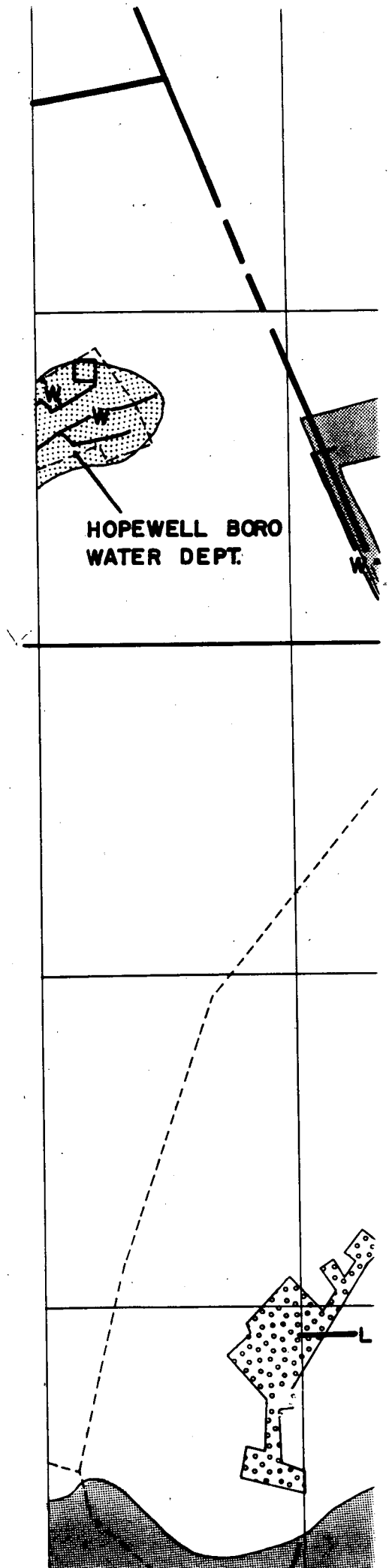
—W— MAJOR WATER MAINS

TOWNSHIP BOUNDARIES

COUNTY BOUNDARIES

STATE BOUNDARIES

ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER



LOCATION AND OWNERS OF PUBLIC SUPPLY WELLS

28-01-715	Hopewell Borough
28-02-119	Elizabethtown Water Company
28-02-135	Elizabethtown Water Company
28-02-175	Elizabeth Water Company
28-02-179	Elizabethtown Water Company
28-02-498	Rocky Hill Realty Co.
28-02-661	Brunswicktown Water Company
28-02-665	Brunswicktown Water Company
28-02-982	Manor Real Estate and Trust Co.
28-03-195	Franklin House Bldg. Corp.
28-03-417	Brunswicktown Water Co.
28-03-418	Brunswicktown Water Co.
28-03-419	Brunswicktown Water Co.
28-03-432	St. Augustine's School
28-03-891	South Brunswick MUA
28-03-898	South Brunswick MUA
28-03-975	South Brunswick MUA
28-04-559	East Brunswick Township
28-04-987	Reliable Water Company
28-04-988	Reliable Water Company
28-05-166	Sayreville Borough
28-05-169	Sayreville Borough
28-05-193	Sayreville Borough
28-05-195	Sayreville Borough
28-05-199	Sayreville Borough
28-05-412	South River Borough
28-05-412	South River Borough
28-05-431	Sayreville Borough
28-05-431	Sayreville Borough
28-05-436	Perth Amboy City
28-05-438	Perth Amboy Water Company
28-05-439	Perth Amboy City
28-05-722	Madison Township Mun. Util. Auth.
28-05-722	Madison Township Mun. Util. Auth.
28-05-726	Madison Water Company
28-05-726	Madison Water Company
28-11-828	Princessville Res. Park
28-11-943	State of New Jersey
28-12-112	Princeton Water Company
28-12-124	Princeton Water Company
28-12-191	Princeton Water Company

Sheet 28

[illegible] LOWER LEFT

[illegible]

[illegible] WELLS

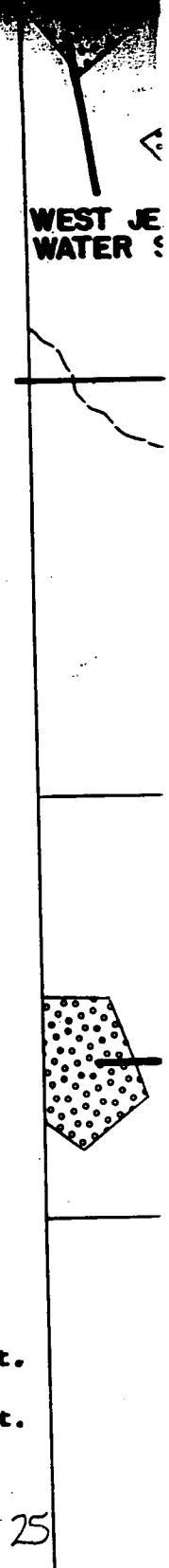
[illegible]

[illegible] Water Co.
[illegible] Service
[illegible]
[illegible]
[illegible]patcong Water Co.
[illegible] Hills Water Co.
[illegible] of Wharton
[illegible] of Wharton
[illegible] of Wharton
[illegible]ury Twp. Board of Education
[illegible]wn of Dover
[illegible]wn of Dover
[illegible]olph Twp.
[illegible]ury Water Co.
[illegible]xbury Water Co.
[illegible]is Co. Municipal Utility Authority
[illegible]is Co. Municipal Utility Authority
andolph Water Co.
[illegible] of Rockaway
[illegible]ral Morris Industrial Park
[illegible] of Denville
[illegible] of Denville
[illegible] of Dover
[illegible] of Dover
[illegible]wn of Dover
[illegible] of Rockaway
[illegible] of Rockaway
[illegible]ternal Milrocast (Div. of Howmet Corp.)
[illegible] of Denville
[illegible] Francis Sanatorium
[illegible]wp. of Parsippany-Troy Hills
[illegible]wp. of Parsippany-Troy Hills
[illegible] of Boonton
[illegible] of Mountain Lakes
[illegible]lcrest Water Co.
[illegible]lcrest Water Co.
[illegible] of Mountain Lakes
[illegible] of Mountain Lakes
[illegible] of Mountain Lakes

25-44-259	Twp. of Raritan
25-44-263	Twp. of Raritan
25-44-265	Twp. of Raritan
25-44-285	Twp. of Raritan
25-44-295	Twp. of Raritan
25-44-342	Twp. of Raritan
25-44-344	Twp. of Raritan

SURFACE WATER INTAKES

25-04-614	Jersey City Water Dept.
25-11-689	Peapack-Gladstone Water Dept.
25-12-291	Mendham Borough Water Dept.
25-12-386	Morristown Water Dept.
25-15-747	Commonwealth Water Co.
25-15-758	Commonwealth Water Co.
25-21-151	Elizabethtown Water Co.
25-23-241	Commonwealth Water Co.
25-32-728	Elizabethtown Water Co.
25-32-969	Elizabethtown Water Co.
25-32-992	Elizabethtown Water Co.
25-32-993	Elizabethtown Water Co.
25-33-771	Elizabethtown Water Co.
25-44-175	City of New Brunswick Water Dept.
25-44-189	Middlesex Water Co.
25-44-556	City of New Brunswick Water Dept.



Sheet 25

LEGEND

AREA SERVED BY PRIVATE WATER SERVICE COMPANIES

AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES

AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES

AREA NOT PRESENTLY SERVED BY WATER SERVICE

PUBLIC SUPPLY WELLS

SURFACE WATER INTAKE

—W— MAJOR WATER MAINS

WATER MAIN ACROSS HIGHWAY FOR FUTURE USE

TOWNSHIP BOUNDARIES

COUNTY BOUNDARIES

ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER

LOCATION AND OWNERS OF PUBLIC SUPPLY WELLS

25-01-258	Boro of Stanhope
25-01-285	Boro of Stanhope
25-01-292	Boro of Stanhope
25-01-336	Lake Hopatcong Water Co.
25-01-478	West Jersey Water Service
25-01-528	Boro of Netcong
25-01-566	Boro of Netcong
25-02-112	Lake Hopatcong Water Co.
25-02-175	Short Hills Water Co.
25-02-379	Boro of Wharton
25-02-389	Boro of Wharton
25-02-397	Boro of Wharton
25-02-499	Roxbury Twp. Board of Education
25-02-639	Town of Dover
25-02-639	Town of Dover
25-02-696	Randolph Twp.
25-02-752	[illegible]

25-44-259	Twp. of Raritan
25-44-263	Twp. of Raritan
25-44-265	Twp. of Raritan
25-44-285	Twp. of Raritan
25-44-295	Twp. of Raritan
25-44-342	Twp. of Raritan
25-44-344	Twp. of Raritan

Sheet 25-87

25-25-178	Commonwealth Water Co.
[redacted]-25-455	Plainfield-Union Water Co.
[redacted]-25-457	Plainfield-Union Water Co.
25-25-461	Plainfield-Union Water Co.
[redacted]-25-482	Plainfield-Union Water Co.
[redacted]-25-492	Plainfield-Union Water Co.
25-25-753	Elizabethtown Water Co.
25-25-754	Plainfield-Union Water Co.
[redacted]-25-755	Plainfield-Union Water Co.
[redacted]-25-775	Elizabethtown Water Co.
25-31-648	Branchburg Twp. Board of Ed.
[redacted]-32-223	Washington Valley Water Co.
[redacted]-32-433	Somerset Park Commission
25-32-751	Elizabethtown Water Co.
[redacted]-32-868	Hillsborough Twp. Bd. of Ed.
[redacted]-32-877	USA Quartermaster's Depot
25-32-878	USA Quartermaster's Depot
25-32-879	USA Quartermaster's Depot
[redacted]-32-943	Boro of Manville
25-32-946	Boro of Manville
25-32-951	Boro of Manville
[redacted]-32-993	Elizabethtown Water Co.
[redacted]-33-278	Warren Twp. Bd. of Ed.
25-33-565	Elizabethtown Water Co.
[redacted]-33-633	Plainfield-Union Water Co.
[redacted]-33-747	Elizabethtown Water Co.
25-33-813	Elizabethtown Water Co.
25-34-165	Elizabethtown Water Co.
[redacted]-34-194	Elizabethtown Water Co.
[redacted]-34-275	Elizabethtown Water Co.
25-34-311	Plainfield-Union Water Co.
[redacted]-34-341	Plainfield-Union Water Co.
[redacted]-34-345	Plainfield-Union Water Co.
25-34-358	Plainfield-Union Water Co.
25-34-411	Plainfield-Union Water Co.
[redacted]-34-421	Elizabethtown Water Co.
25-34-423	Elizabethtown Water Co.
25-34-431	Elizabethtown Water Co.
[redacted]-34-436	Elizabethtown Water Co.
[redacted]-34-439	Middlesex Water Co.
25-34-526	Middlesex Water Co.
[redacted]-34-531	Middlesex Water Co.
[redacted]-34-532	Middlesex Water Co.
25-34-533	Middlesex Water Co.
25-34-534	Middlesex Water Co.
[redacted]-34-537	Middlesex Water Co.
25-34-538	Middlesex Water Co.
25-34-539	Middlesex Water Co.
[redacted]-34-552	Middlesex Water Co.
[redacted]-34-554	Middlesex Water Co.
25-34-555	Middlesex Water Co.
25-34-556	Middlesex Water Co.
[redacted]-34-613	Middlesex Water Co.
25-34-637	Middlesex Water Co.
25-34-638	Middlesex Water Co.
[redacted]-34-662	Middlesex Water Co.
[redacted]-34-915	Middlesex Water Co.
25-34-755	Middlesex Water Co.
[redacted]-42-186	Hillsborough Water Co.
[redacted]-4-253	Middlesex Water Co.

Sheet 25

REFERENCE NO. 25

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9001-10	Feb. 14, 1990	3:00 PM

DISTRIBUTION:
File - Celotex (A)

BETWEEN:	OF:	PHONE:
Don Byrne	NJDEP Fish + Game Nacote Creek Station	(609) 441-3292

AND: Maria Coler

DISCUSSION: (NUS)

I spoke with Don Byrne to determine fish production in the Raritan River near the bay. He wasn't able to give me figures in terms of production per acre. However, he gave the amounts relative to my figure of 155 lbs/acre for the bay. He estimated that the value would be nearly the same for the river as the bay up until the Rt 35 Bridge, and the value decreases by 50% from the Rt. 35 Bridge to New Brunswick. The river is freshwater ~~from~~ MC 2-14-90 upstream from New Brunswick. He also stated that crabbing and shellfishing are popular and represent a commercially valuable resource. He gave me the number for the Lebanon Fisheries Lab to determine freshwater fish production upstream from New Brunswick.

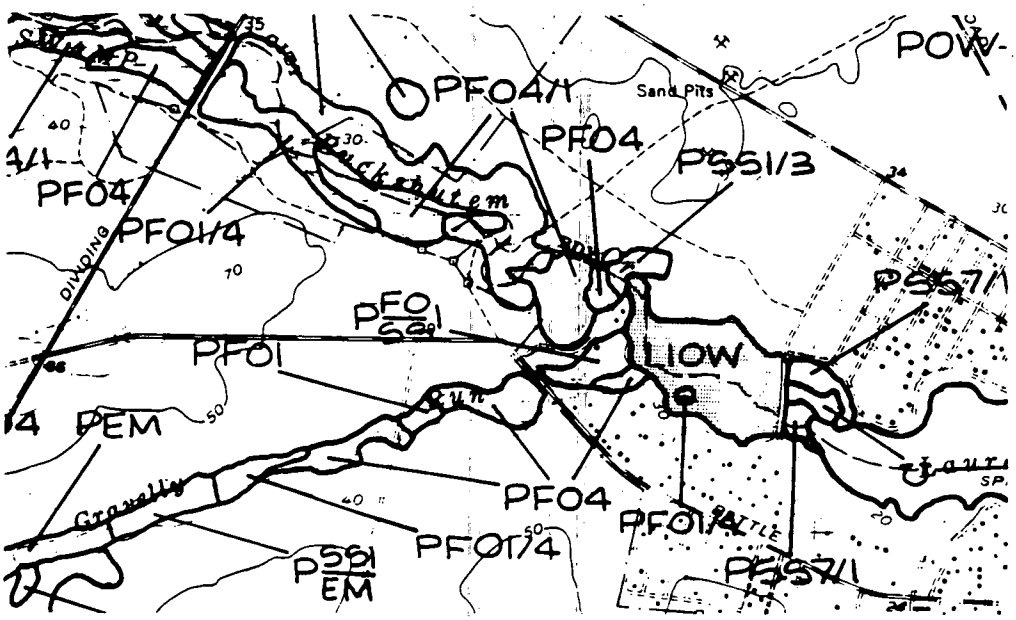
ACTION ITEMS:

Lebanon Fisheries Lab, Freshwater Fisheries
contact: Bob Stuart at (201) 236-2118

NUS 067 REVISED 0581

REFERENCE NO. 26

ATLAS
OF
NATIONAL WETLANDS INVENTORY MAPS
FOR
NEW JERSEY



PORTION OF DIVIDING CREEK MAP SCALE: 1:24,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Region Five
Habitat Resources
One Gateway Center, Suite 700
Newton Corner, Massachusetts

1984

HOW TO USE THIS ATLAS

The Atlas contains reductions of all 1:24,000 National Wetlands Inventory maps. Maps appear in alphabetical order. Map names can be located on the index map (Figure 2). Each map shows the configuration, location and type of wetlands and deepwater habitats found within a given area.

WETLAND LEGEND

Wetland data are displayed on maps by a series of letters and numbers (alpha-numerics). Mixing of classes and subclasses are represented by a diagonal line. The more common symbols are shown below; less common symbols have been omitted for simplicity. For identifying these latter symbols, the reader should refer to an actual NWI map legend.

Examples of Alpha-numerics:

E2EMN6	=	Estuarine (E), Intertidal(2), Emergent Wetland(EM), Regularly Flooded(N), Oligohaline(6)
E2FL	=	Estuarine(E), Intertidal(2), Flat(FL)
PF01	=	Palustrine(P), Forested Wetland(FO), Broad-leaved Deciduous(1)
PEM/OW	=	Palustrine(P), Emergent Wetland/Open Water(EM/OW)
PFO/SS1	=	Palustrine(P), Forested Wetland/Scrub-Shrub Wetland(FO/SS), Broad-leaved Deceduous(1)

SYMBOLOGY

Systems and Subsystems:

M 1	=	Marine Subtidal	R 3	=	Riverine Upper Perennial
M 2	=	Marine Intertidal	R 4	=	Riverine Intermittent
E 1	=	Estuarine Subtidal	L 1	=	Lacustrine Limnetic
E 2	=	Estuarine Intertidal	L 2	=	Lacustrine Littoral
R 1	=	Riverine Tidal	P	=	Palustrine
R 2	=	Riverine Lower Perennial	U	=	Upland

Classes (subclasses and modifers designated where appropriate):

AB	=	Aquatic Bed
BB	=	Beach/Bar
EM	=	Emergent Wetland
EMN6	=	Emergent Wetland, Regularly Flooded, Oligohaline
EMP6	=	Emergent Wetland, Irregularly Flooded, Oligohaline
EMR	=	Emergent Wetland, Seasonally Flooded-Tidal
FL	=	Flat
FO1	=	Forested Wetland, Broad-leaved Deciduous
FO2	=	Forested Wetland, Needle-leaved Deciduous
FO4	=	Forested Wetland, Needle-leaved Evergreen
OW	=	Open Water/Unknown Bottom
SS1	=	Scrub=Shrub Wetland, Broad-leaved Deciduous
SS3	=	Scrub-Shrub Wetland, Broad-leaved Evergreen
SS4	=	Scrub-Shrub Wetland, Needle-leaved Evergreen
SS5	=	Scrub-Shrub Wetland, Dead
SS7	=	Scrub-Shrub Wetland, Evergreen

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR

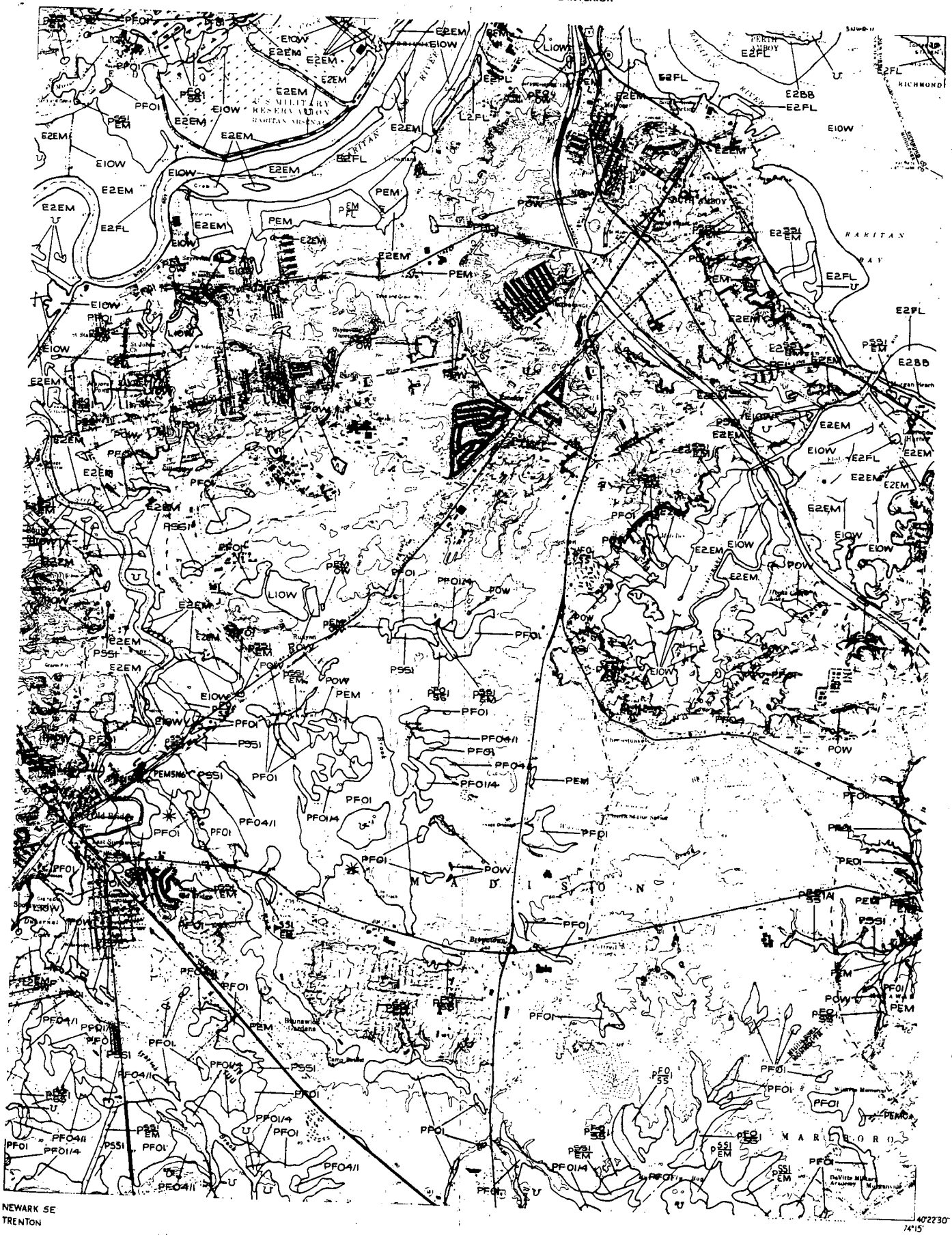
NEWARK SE

TRENTON

KEYPORT, N.J.-N.Y.

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



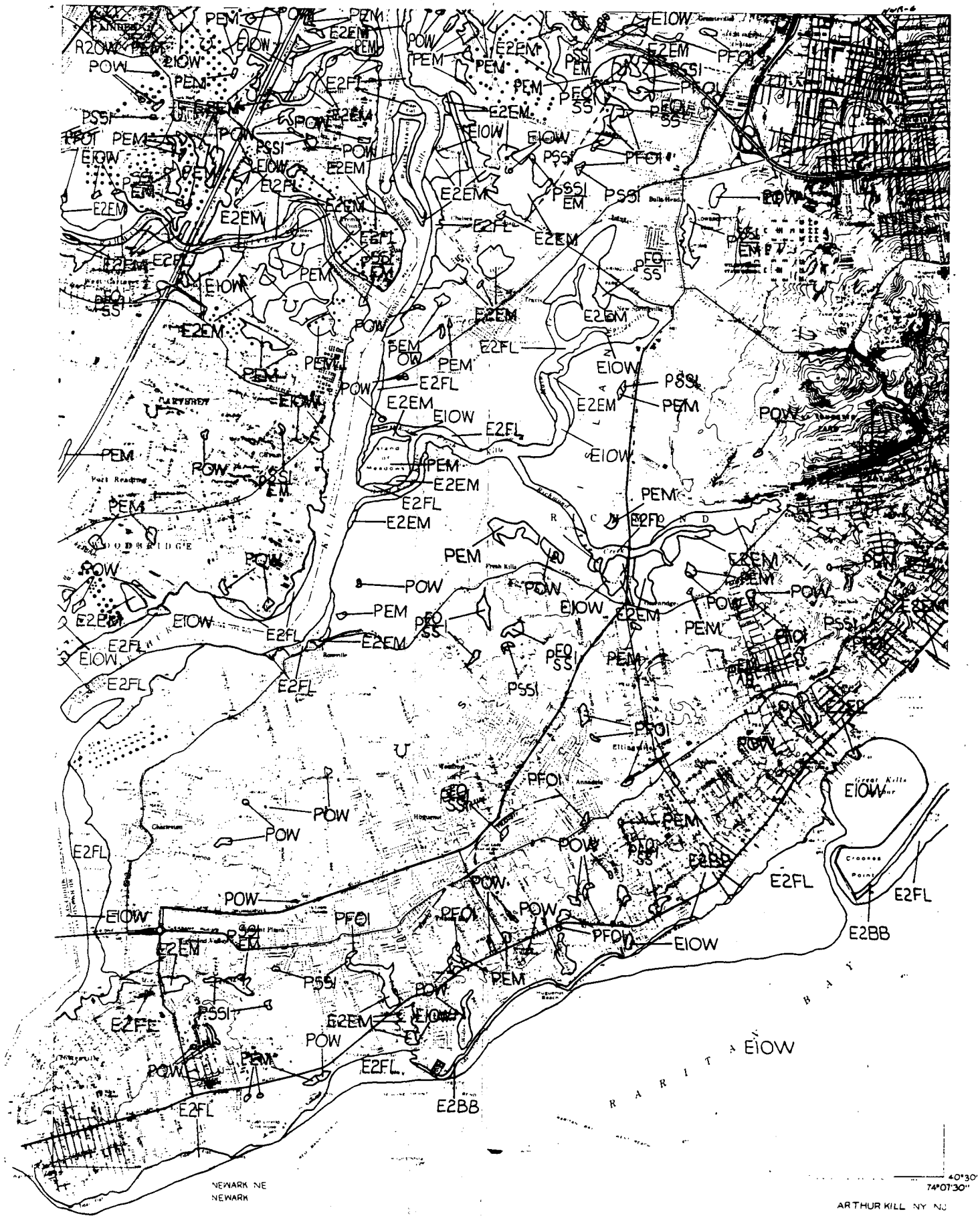
NEWARK SE
TRENTON

40°22'30"
74°15'

SOUTH AMBOY, N.J.-N.Y.

NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR



NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR

2 NWR-1

NEWARK NE
NEWARK

40° 30'
74°15'

PERTH AMBOY, N.J. – NY

REFERENCE NO. 27

TERRESTRIAL ORGANISMS

Shown in BROWN: species with special status shown in [illegible]-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (301–350)

301 Eastern hemlock
302 Spleenwort (S)
303 Spider lily (S)
304 Pond bush (S)
305 Watermilfoil (S)
306 Hooded pitcher plant (S)
307 Tree
308 Prickly pear cactus (S)
309 Trailing arbutus (S)
310 Eastern bumelia
311 Pitcher plant
312 Baldcypress
313 Redbay
314 Seaside alder
315 Box huckleberry
316 Purple fringeless orchid
317 Pink lady's slipper
318 Ebony spleenwort (S)
319 Orchids (S)
320 Golden club (S)
321 Florida beargrass
322 East-coast coontie
323 Fall-flowering ixia
324 Jackson-vine
325 Spoon-flower
326 Curtiss milkweed
327 Sea lavender
328 Hand fern
329 Needle palm
330 Yellow squirrel-banana
331 Beach creeper
332 Florida coontie
333 Four-petal pawpaw
334 Bird's nest spleenwort
335 Burrowing four-o'clock
336 Beach star
337 Silver palm
338 Dancing lady orchid
339 Tamarindillo
340 Fuch's bromeliad
341 Everglades peperomia
342 Buccaneer palm
343 Slender spleenwort
344 Pineland jacquemontia
345 Mahogany mistletoe
346 Florida thatch
347 Twisted air plant
348 Long's bittercress
349 Venus's flytrap

INVERTEBRATES (351–400)

351 Monarch butterfly
352 Zebra butterfly

BIRDS (401–600)

SHOREBIRDS (401–430)

401 Shorebirds
402 Terns
403 Gulls
404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstones
414 Plovers
415 Piping plover
416 American oystercatcher (S)

WADING BIRDS (431–460)

431 Wading birds
432 Herons
433 Egrets
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461–500)

461 Waterfowl

40074-A1-EI-2

Newark

N. J.—N. Y.—PA.

1:250 000-scale map of

Atlantic Coast Ecological Inventory

Produced by

U. S. FISH AND WILDLIFE SERVICE

1980

AQUATIC ORGANISMS

Shown in BLUE: species with special status shown in [illegible]-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (1–50)

1 Irish moss
2 Rockweed

INVERTEBRATES (51–100)

51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab

AQUATIC ORGANISMS

Shown in BLUE; species with special status shown in RED(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL — SPECIES

PLANTS (1-50)
1 Irish moss
2 Rockweed

INVERTEBRATES (51-100)
51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab
60 Eastern oyster
61 European oyster
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm
70 Sandworm
71 White shrimp
72 Brown shrimp
73 Northern shrimp
74 Rock crab
75 Jonah crab
76 Whelk
77 Ocean quahog
78 Pink shrimp
79 Stone crab
80 Spiny lobster

FISH (101-200)
101 Sharks, skates, rays
102 Herring
103 Salmon and trout
104 Catfish
105 Cod
106 Sunfish and bass
107 Drum
108 Flatfish
109 Longnose gar
110 Shortnose sturgeon (F)
111 Atlantic sturgeon (S)
112 American eel
113 Blueback herring
114 Hickory shad
115 Alewife
116 American shad (S)
117 Atlantic menhaden
118 Atlantic herring
119 Gizzard shad
120 Tarpon
121 Atlantic salmon
122 White catfish
123 Channel catfish
124 Yellow bullhead
125 Brown bullhead
126 Flat bullhead
127 Sea catfish
128 White perch
129 Striped bass
130 Black sea bass
131 Redbreast sunfish
132 Warmouth
133 Bluegill
134 Largemouth bass
135 Black crappie
136 Sheepshead
137 Spotted seatrout
138 Weakfish
139 Spot
140 Atlantic croaker
141 Southern kingfish
142 Northern kingfish
143 Gulf kingfish
144 Red drum
145 Star drum
146 Black drum
147 Summer flounder
148 Southern flounder
149 Winter flounder
150 Rainbow smelt
151 Atlantic tomcod
152 Threadfin shad
153 Carp
154 Atlantic mackerel
155 Chain pickerel
156 White bass
157 Northern puffer
158 Silver perch
159 Florida pompano
160 Bluefish
161 Spanish mackerel
162 Cobia
163 Mullet
164 White crappie
165 Redear sunfish
166 Smallmouth bass
167 Yellow perch
168 Pumpkinseed
169 Atlantic halibut
170 Atlantic cod
171 Pollock
172 Haddock
173 Hake
174 Bluefin tuna
175 Walleye
176 Northern pike
177 Scup
178 Tautog
179 Atlantic spadefish
180 Bay anchovy
181 Butterfish
182 Little tunny
183 Atlantic bonito
184 Brown trout
185 Cunner
186 Yellowtail flounder
187 Gulf flounder
188 Pinfish
189 King mackerel
190 Pigfish
191 White grunt
192 Tripletail
193 Ladyfish
194 Snook
195 Jack
196 Snapper
197 Grouper
198 Sailfish
199 Great barracuda
200 Maryland darter (F)

REPTILES AND AMPHIBIANS (201-250)
201 Green sea turtle (F)
202 Loggerhead sea turtle (F)
203 Hawksbill turtle (F)
204 Atlantic ridley turtle (F)
205 Leatherback turtle (F)

MAMMALS (251-300)
251 Florida manatee (F
252 Atlantic bottlenose dolphin
253 Pigmy sperm whale
254 Short-finned pilot whale
255 Harbor seal
256 Gray seal
257 Right whale (F.
258 Atlantic spotted dolphin

High salinity estuarine habitat (generally 16.5 to 30 parts per thousand): arrows used for wide estuaries.

Mid salinity estuarine habitat (generally 5 to 16.5 parts per thousand).

Low salinity estuarine habitat (generally 0.5 to 5 parts per thousand) and tidal freshwater.

Non-tidal freshwater riverine and creek habitat.

TERRESTRIAL ORGANISMS

Shown in BROWN; species with special status shown in RED (F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL — SPECIES

PLANTS (301-350)
301 Eastern hemlock
302 Spleenwort (S)
303 Spider lily (S)
304 Pond bush (S)
305 Watermilfoil (S)
306 Hooded pitcher plant (S)
307 Tree
308 Prickly pear cactus (S)
309 Trailing arbutus (S)
310 Eastern bumelia
311 Pitcher plant
312 Baldcypress
313 Redbay
314 Seaside alder
315 Box huckleberry
316 Purple fringeless orchid
317 Pink lady's slipper
318 Ebony spleenwort (S)
319 Orchids (S)
320 Golden club (S)
321 Florida beargrass
322 East-coast coontie
323 Fall-flowering ixia
324 Jackson-vine
325 Spoon-flower
326 Curtiss milkweed
327 Sea lavender
328 Hand fern
329 Needle palm
330 Yellow squirrel-banana
331 Beach creeper
332 Florida coontie
333 Four-petal pawpaw
334 Bird's nest spleenwort
335 Burrowing four-o'clock
336 Beach star
337 Silver palm
338 Dancing lady orchid
339 Tamarindillo
340 Fuch's bromeliad
341 Everglades peperomia
342 Buccaneer palm
343 Slender spleenwort
344 Pineland jacquemontia
345 Mahogany mistletoe
346 Florida thatch
347 Twisted air plant
348 Long's bittercress
349 Venus's flytrap

INVERTEBRATES (351-400)
351 Monarch butterfly
352 Zebra butterfly

BIRDS (401-600)

SHOREBIRDS (401-430)
401 Shorebirds
402 Terns
403 Gulls
404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstones
414 Plovers
415 Piping plover
416 American oystercatcher (S)

WADING BIRDS (431-460)
431 Wading birds
432 Herons
433 Egrets
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461-500)
461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese
473 Snow goose
474 Gadwall
475 Black duck

RAPTORS (501-530)
501 Raptors
502 Owls
503 Kites
504 Hawks
505 Bald eagle (F)
506 Osprey (S)
507 Peregrine falcon (F)
508 Cooper's hawk (S)
509 Swallow-tailed kite
510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

SEABIRDS (531-550)
531 Seabirds
532 Petrels, shearwaters, and albatrosses
533 Pelican and allies
534 Alcids
535 Brown pelican (F)
536 Black guillemot
537 Leach's petrel
538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet

538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet
542 Wilson's petrel
543 Northern phalarope
544 Audubon's shearwater
545 Greater shearwater
546 Shearwaters
547 Petrels
548 Jaegers
549 White pelican

SONGBIRDS AND OTHERS (551-600)
551 Songbirds and others
552 Red-cockaded woodpecker (F
553 Chachalaca
554 Bachman's warbler (F
555 Wild turkey
556 American woodcock
557 Pileated woodpecker
558 Swainson's warbler
559 Ruffed grouse
560 Bobwhite
561 Mourning dove
562 Warblers
563 Ring-necked pheasant
564 Bank swallow
565 Dusky seaside sparrow (F
566 White-crowned pigeon (S

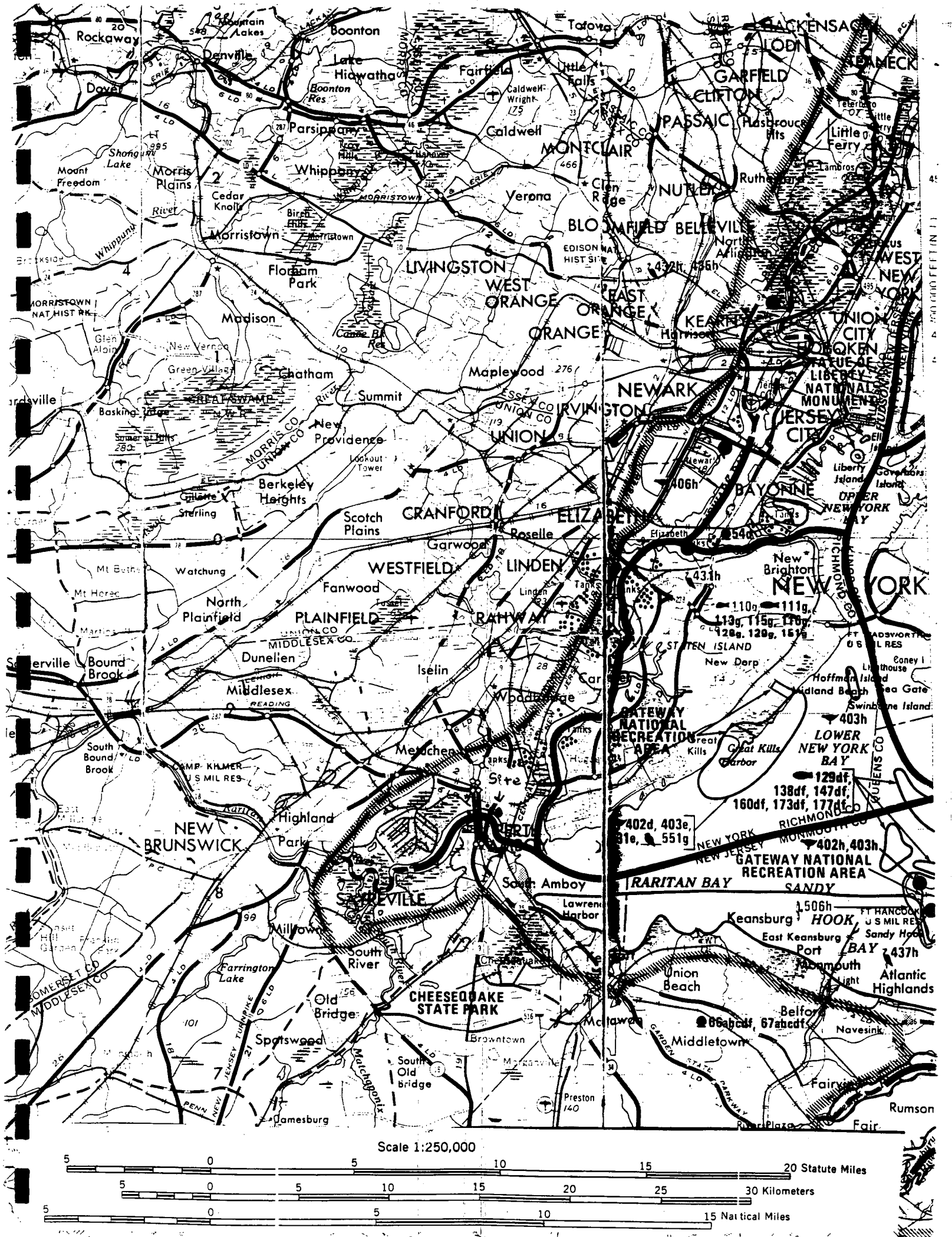
REPTILES AND AMPHIBIANS (601-700)
601 Eastern narrow-mouthed toad (S)
602 Eastern indigo snake (F)
603 American alligator (F)
604 Northern diamondback terrapin
605 Amphiumas
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S.
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink
612 Map turtle
613 Plymouth red-bellied turtle (F)
614 Eastern diamondback rattlesnake
615 Carolina gopher frog
616 Florida gopher frog (S)
617 Atlantic salt marsh watersnake (F)
618 American crocodile (F)
619 Florida Keys mole skink (S)
620 Florida black-headed snake (S)
621 Pine barrens tree frog (S)
622 Northern pine snake (S)
623 Corn snake (S)
624 Timber rattlesnake (S)
625 Southern gray tree frog (S)

MAMMALS (701-800)
701 Beaver
702 Whitetail deer
703 European fallow deer
704 Blackbeard Island deer
705 Opossum
706 Marsh rabbit
707 Rice rat
708 Raccoon
709 St. Simon Island raccoon
710 Mink
711 River otter (F)
712 Feral hog
713 Feral cow
714 Cumberland Island pocket gopher
715 Anastasia Island cotton mouse
716 Aquatic furbearers
717 Black bear (S)
718 Bobcat
719 Eastern gray squirrel
720 Eastern fox squirrel
721 Eastern cottontail
722 Delmarva fox squirrel (F)
723 Muskrat
724 Red fox
725 Bats
726 Gray fox
727 Striped skunk
728 Nutria
729 Longtail weasel
730 Colonial pocket gopher (S)
731 Wild ponies
732 Sika deer
733 Beach meadow vole
734 Block Island meadow vole
735 Pallid beach mouse (S.
736 Sherman's fox squirrel (S.
737 Florida mouse (S
738 Florida panther (F
739 Goff's pocket gopher (S)
740 Key Largo wood rat (S)
741 Lower Keys cotton rat (S)
742 Key Largo cotton mouse (S.

HABITAT USE

Shown in RED for species with special status, BLUE for aquatic organisms and BROWN for terrestrial organisms

a Spawning ground
b Nursery
c Commercial harvesting area
d Adult concentration
e Overwintering area
f Sport fishing/hunting area
g Migratory area
n Nesting area
* Unusual distribution or specimen


Rockaway
Mountain Lakes
Boonton
Denville
Dover
Lake Hiawatha
Boonton Res
Fairfield
Little Falls
Caldwell-Wright
Caldwell
Parsippany
Whippany
Morris Plains
Mount Freedom
Shongum Lake
Cedar Knolls
Morristown
Morristown Nat Hist Pk
Florham Park
Madison
Glen Alpin
New Vernon
Green Village
Chatham
Basking Ridge
Great Swamp N.W.R.
Summit
New Providence
Berkeley Heights
Gillette
Sterling
Scotch Plains
Garwood
Roselle
Watchung
Mt Bethel
Mt Horeb
North Plainfield
Fanwood
Dunellen
Middlesex
Bound Brook
South Bound Brook
Camp Kilmer U S Mil Res
Highland Park
New Brunswick
Milltown
Farrington Lake
South River
Old Bridge
Spotswood
Cheesequake State Park
Browntown
South Old Bridge
Matchaponix
Jamesburg
Preston
Somerset Co
Middlesex Co
Morris Co
Union Co
Essex Co
Hudson Co
Bergen Co
Passaic Co
Hackensack
Lodi
Teaneck
Garfield
Clifton
Paterson
Hasbrouck Hts
Little Ferry
Montclair
Glen Ridge
Nutley
Verona
Bloomfield
Belleville
North Arlington
Edison Nat Hist Site
Livingston
West Orange
East Orange
Orange
Kearny
Harrison
Union City
Hoboken
Statue of Liberty National Monument
Jersey City
Newark
Irvington
Union
Bayonne
Liberty Island
Governors Island
Upper New York Bay
Elizabeth
Cranford
Linden
Rahway
Westfield
Plainfield
New Brighton
New York
Staten Island
New Dorp
Hoffman Island
Midland Beach
Sea Gate
Swinburne Island
Gateway National Recreation Area
Great Kills
Great Kills Harbor
Lower New York Bay
Raritan Bay
Sandy Hook
Keansburg
Hook
East Keansburg
Port Monmouth
Bay
Atlantic Highlands
Union Beach
Belford
Navesink
Middletown
Fair Haven
Rumson
Fair
Garden State Parkway
Jersey Turnpike
Penn Nev
Scale 1:250,000
5 0 5 10 15 20 Statute Miles
5 0 5 10 15 20 25 30 Kilometers
5 0 5 10 15 Nautical Miles

REFERENCE NO. 28

Surface Water Classifications

Surface Water Quality Standards
N.J.A.C. 7:9-4

May 1985

State of New Jersey, Department of Environmental Protection/Division of Water Resources

(c) In all FW2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Primary and secondary contact recreation;

3. Industrial and agricultural water supply;

4. Public potable water supply after such treatment as required by law or regulation; and

5. Any other reasonable uses.

(d) In all SE1 waters the designated uses are:

1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

2. Maintenance, migration and propagation of the natural and established biota;

3. Primary and secondary contact recreation; and

4. Any other reasonable uses.

(e) In all SE2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Migration of diadromous fish;

3. Maintenance of wildlife;

4. Secondary contact recreation; and

5. Any other reasonable uses.

(f) In all SE3 waters the designated uses are:

1. Secondary contact recreation;

2. Maintenance and migration of fish populations;

3. Migration of diadromous fish;

4. Maintenance of wildlife; and

5. Any other reasonable uses.

(g) In all SC waters the designated uses are:

1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

PIGEON SWAMP (S. Brunswick) - All waters within the boundaries of Pigeon Swamp State Park	FW2-NT(C1)
PIKE RUN (Belle Meade) - Entire length	FW2-NT
PINE BROOK (Clarks Mills) - Entire length	FW2-NT
PINE BROOK (Cooks Mill) - Entire length	FW2-TM
PLEASANT RUN (Readington) - Entire length	FW2-NT
PRESCOTT BROOK (Stanton Station) - Entire length	FW2-TM
RAMANESSIN [HOP] BROOK (Holmdel) - Entire length	FW2-TM
RARITAN BAY - Entire Drainage	FW2-NT/SE1
RARITAN RIVER	
NORTH BRANCH (Also see INDIA BROOK)	
(Pleasant Valley) - Source to, but not including, Ravine Lake	FW2-TP(C1)
(Far Hills) - Ravine Lake dam to Rt. 512 bridge	FW2-TM
(Bedminster) - Rt. 512 bridge to confluence with South Branch, Raritan River	FW2-NT
SOUTH BRANCH RARITAN RIVER	
(Mt. Olive) - Source to the dam that is 390 feet upstream of the Flanders-Drakestown Road bridge	FW2-NT(C1)
(Mt. Olive) - Dam to confluence with Turkey Brook	FW2-TM(C1)
(Naughright) - Confluence with Turkey Brook to confluence with Electric Brook	FW2-TP(C1)
(Clinton) - Confluence with Electric Brook to downstream end of Packers Island, except segment described separately, below	FW2-TM
(Ken Lockwood Gorge) - River and tributaries within Ken Lockwood Gorge Wildlife Management Area	FW2-TM(C1)
(Neshanic Sta.) - Downstream end of Packers Island to confluence with North Branch, Raritan River	FW2-NT
MAIN STEM RARITAN RIVER	
(Bound Brook) - From confluence of North and South Branches to Landing Lane bridge in New Brunswick and all freshwater tributaries downstream of Landing Lane bridge.	FW2-NT
(Sayreville) - Landing Lane bridge to Raritan Bay and all saline water tributaries	SE1
RINEHART BROOK (Hacklebarney) - Entire length	FW2-TP(C1)
ROCK BROOK (Montgomery) - Entire length	FW2-NT
ROCKAWAY CREEK	
NORTH BRANCH	
(Mountainville) - Source to Rt. 523 bridge	FW2-TP(C1)
(Whitehouse) - Rt. 523 bridge to confluence with South Branch	FW2-TM

REFERENCE NO. 29

Celotex Corporation--Proposed Compliance Order Pursuant to Section 113(a)(3) of the Clean Air Act--REQUEST FOR CONCURRENCE

MAY 1975

Gerald M. Hansler, P.E.
Regional Administrator

Robert L. Baum
Deputy Assistant Administrator for
General Enforcement (EG-339)

A. Facility Alleged to be In Violation:

Celotex Corporation, Market and Herbert Streets, Perth Amboy, New Jersey 08861

B. Regulation Alleged to be Violated:

Volume 40 CFR §61.22(c)(7), a regulation promulgated pursuant to Section 112(b)(1)(B) of the Clean Air Act, as amended, declares that there shall be "no visible emissions to the outside air" incidental to the manufacture of paints, coatings, caulks, adhesives, or sealants containing commercial asbestos. "Outside air" is defined in 40 CFR §61.21(e) to mean "the air outside buildings and structures."

Provisions are made in 40 CFR §61.22(f) for an alternative means of complying with the terms of the standard set at 40 CFR §61.22(c)(7); that alternative involves the installation of an air cleaning device which satisfies the requirements of 40 CFR §61.23. The Regional Office has found, on the basis of evidence to be set out and discussed at length below, that the asbestos paint manufacturing operation of the Celotex Corporation's Perth Amboy facility is in violation of the "no visible emissions" standard of 40 CFR §61.22(c)(7), and does not meet the alternative equipment standard of 40 CFR §61.22(f).

C. Background of Alleged Violation:

On May 13, 1975, two engineers from the Air Facilities Branch (AFB) of the Facilities Technology Division, Region II US. EPA visited the Celotex Corporation's Perth Amboy, New Jersey facility in connection with AFB's continuing program of source surveillance. This visit followed AFB's February 18, 1975 identification of the Perth Amboy facility of the Corporation as a source subject to the regulations promulgated at 40 CFR Part 61, and AFB's subsequent discovery that the source had failed to file reports required by 40 CFR §61.10(a). (The history of prior enforcement actions against this source is discussed in detail, below, in connection with the rationale this office advances in support of the proposed compliance order.)

315127

II a

D. Data Upon which Finding of Violation is Proposed to be Made /Discussion of Evidence/:

During the course of their May 13, 1975 plant visit, Messrs. Marcus Kantz and Gabriel Marciante, AFB engineers, observed the conduct of several of the company's manufacturing operations, including the formulation of asbestos-content ("asphalt") paint. Associated with the latter operation, they observed company employees engaged in procedures resulting in the generation of dense clouds of asbestos dust which were emitted to the outside air through two doors and a process vent. Their observations are related in greater detail in a memorandum (Kantz to Menczel) dated May 15, 1975. A copy of the referenced memorandum is attached (Tab I).

For present purposes, it is sufficient to note that both EPA inspectors observed visible emissions to the outside air in contravention of the emission standard of 40 CFR §61.22(c)(7). During one phase of the relevant operation, our inspectors watched as 100-pound bags of pure raw asbestos* were emptied into process vats; they found the emissions generated incidental to this phase of the operation to be particularly dense, at times obscuring substantially their view of a contrasting background (see Tab I, page 5).

While 40 CFR §61.22(c) would appear, in proscribing all visible emissions, to set a "reasonable Man" standard, requiring no special training or expertise, Mr. Marciante, a certified smoke watcher, took the precaution of making formal opacity readings in accordance with the procedural requirements of EPA Reference Method 9. These readings were confined to emissions from the throat of a process vent associated with the paint manufacturing operation, which was not the point at which the densest emissions were observed; Mr. Marciante's monitoring of emissions at this point nonetheless resulted in readings as high as 10% in opacity--substantially in excess of the "no visible emissions" standard. (Copies of Mr. Marciante's visible emission sheets are attached as Tab II).

E. Enforcement Action Proposed:

The Enforcement and Regional Counsel Division, Region II, proposes to issue a compliance order pursuant to Section 113(a)(3) of the Clean Air Act. The proposed order (which, along with a proposed cover letter, is attached as Tab III) would require the company to suspend its asbestos paint manufacturing operations until such time as written permission for the resumption of those operations is granted by the Regional Office.

*That these bags did, in fact, contain asbestos was confirmed by Mr. J. Bagnell, a company employee, as well as by Mr. Kantz's three years of experience working with asbestos and the NESHAPS program.

That permission would be granted when the company has either (1) completed the steps necessary to eliminate visible emissions to the outside air incidental to asbestos paint manufacturing operations at the company's Perth Amboy facility, consistent with the requirements of 40 CFR §61.22(c)(7) or, alternatively, has (2) completed, pursuant to the terms of 40 CFR §61.22(f), the installation of an air cleaning device (or devices) satisfying the requirements of 40 CFR §61.23.

F. Rationale in Support of Proposed Order:

It is understood that the action we propose, which could involve a suspension of one of the subject source's many manufacturing operations, represents a departure from previous Agency enforcement policy. We feel that the following considerations support our election of this enforcement option.

(1) From a public health standpoint, it is undesirable to allow the company to continue asbestos paint manufacturing operations in violation of the regulations while installing necessary control equipment.

In light of the seriousness of the alleged violation, this office believes the company's continued conduct of asbestos paint formulation during the period of time necessary for the installation of necessary control equipment to be inappropriate. The hazardous nature of the pollutant involved is compounded by the density of the emissions observed, and by the plant's proximity to a public thoroughfare and to neighboring commercial and industrial establishments (estimated by Mr. Kantz to be less than 100 yards distant). Although the impact upon the company's own employees may be technically the concern of another federal agency (OSHA), this consideration, too, is properly taken into account when weighing our enforcement alternatives in the face of a detected violation of EPA regulations.

(2) Minimal impact of proposed shut-down upon the company.

(a) Short period of time involved:

Because of the necessity to comply with relevant EPA and OSHA requirements, the company has already initiated plans for the installation of control equipment which, in the estimation of Mr. Kantz and Mr. Marciante, would be adequate to bring the paint manufacturing operation into compliance with the "no visible emissions" standard. Preliminary design of that equipment (which includes hoods, duct-work, and a bag house) has already been completed. In light of this fact, it is thought that the necessary equipment may be procured and installed by July 1, 1975. This projection is supported by the company's own time estimate (Tab VI).

III a 3

(b) Small number of employees affected by shut-down:

During the course of their May 13, 1975 plant visit, Messrs. Kantz and Marciante observed two Celotex Corporation employees engaged in activities relating to the relevant paint manufacturing operation. While acknowledging that perhaps one more employee may be involved in a phase of that operation that they did not observe, it is their opinion that the entire operation involves the part-time services of a maximum of three Celotex employees, for periods aggregating to less than one man-day/day.

(c) Small contribution of paint manufacturing operation to company's profit picture:

EPA's inspectors believe that no fewer than ten, and perhaps as many as twenty, product lines are produced at the company's Perth Amboy plant. A total of three hundred persons are employed at that facility; as indicated above, a maximum of three are engaged on a part-time basis in the relevant paint manufacturing operation. On the basis of this fact, and of their observations during the course of their recent plant visit, our inspectors concluded that the operation involved here is a very small one in the company's production scheme, accounting for a maximum of 5% of the company's dollar volume, and probably considerably less. We therefore project that a one-month suspension of the paint manufacturing operation would have a minimal impact on the company's earnings.

(3) "Scienter"--company's prior knowledge of the existence of relevant regulations:

A substantial body of evidence exists from which we are able to impute to the company prior knowledge of the existence of the regulations codified at 40 CFR Part 61. Although "scienter" is not a necessary element in this case, since we are not presently contemplating initiation of a criminal proceeding, we feel that evidence of the company's prior awareness of the existence of the regulations is relevant as it operates to deprive Celotex of the defense of "surprise," and as it thereby serves to support the appropriateness of the compliance order herein proposed.

On March 17, 1975, an Order pursuant to Section 113(a)(3) of the Clean Air Act, was sent to Mr. J. G. Trontell, Plant Manager of the Corporation's Perth Amboy facility, requiring the Corporation to comply with the reporting requirements of 40 CFR §61.10(a) (Tab IV). Copies of the relevant NESHAPS regulations were attached to that Order.

There is, moreover, conclusive evidence that this did not represent the company's initial contact with these regulations. A March 21, 1975 letter over the signature of Mr. R. E. Rowe, Industrial Relations Supervisor of the company's Perth Amboy plant (attached as Tab V),

indicates that the company had completed copies of the source report forms required by 40 CFR §61.10(a) on May 23, 1973. It is thus certain that the company was aware of the existence of our NESHAPS regulations on that date, and perhaps earlier. In this context, Mr. Rowe's letter represents an admission against the company's interest, serving to contravert any claim that the company may subsequently make that its noncompliance is attributable to lack of prior notice.

On balance, and on the basis of the facts recited hereinabove, it is the opinion of this office that suspension of paint manufacturing operations at the company's Perth Amboy plant is justified; that the minimal impact that such shut-down will have upon the company and its employees is substantially outweighed by the compelling health considerations presented here. It is believed, moreover, that claims of "surprise" or lack of notice which might dispose the Agency toward leniency in election of appropriate enforcement options may not be made in good faith by the Celotex Corporation.

G. Enforcement Alternatives:

(1) The company can be ordered to comply by July 1, 1975 without ordering the interim suspension of paint manufacturing operations.

Pro:

This would allow us to secure the company's eventual compliance without risking complaint of financial damage which could conceivably attend our interim shut-down requirement, and without departing fromthe Agency's past enforcement policies.

Contra:

(a) The company's continued generation of heavy asbestos pollution during this one-month interim period would make this, in our view, an unacceptable alternative from the public health standpoint.

(b) The fact that it will be required to discontinue the relevant operation until compliance is achieved can be expected to induce the company to complete necessary steps more quickly, perhaps shortening the projected one-month compliance period considerably.

(2) A civil action may be commenced pursuant to the authority of §113(b)(3) of the Clean Air Act to enjoin the company from continuing the relevant paint formulation operation in violation of 40 CFR §61.22(c)(7).

Pro:

This alternative enjoys the same advantages as the §113(a)(3) administrative order proposed herein, requiring the company to comply, and to discontinue its objectionable activities during the interim period before compliance is achieved.

Contra:

This alternative enjoys no advantages that are not offered by the administrative order approach proposed herein (aside, perhaps, from the advantage offered by judicial imprimatur), and, in fact, would be likely (since it would require coordination with and participation of the Department of Justice and the local United States Attorney's office) to cost us more time in reaching the same end.

(3) A criminal action may be initiated against the company pursuant to the authority of §113(c)(1).

Pro:

The deterrent effect that our successful prosecution of such an action would be likely to have upon sources similarly situated.

Contra:

(a) The evidence that we have to support a claim of "knowing violation" is neither conclusive, nor overwhelming.

(b) Our principal object in the face of such a violation as we are here presented with should be the immediate abatement of the hazardous emissions involved. A criminal action would not directly serve that purpose, and should therefore be thought of as a supplement to, and not in lieu of, an action calculated to serve the desired end.

H. Cost of Necessary Compliance Action (Exclusive of Incidental Costs Associated with Proposed Shut-Down):

The Celotex Corporation estimates that the cost of the necessary control equipment is $11,900.

I. Recommendation:

It is the recommendation of Region II that the attached Notice of Violation and Order be sent to the Perth Amboy facility of the Celotex Corporation, along with the accompanying cover letter.

J. Documents Enclosed:

(a) Memorandum, Kantz to Menczel, May 15, 1975 (Tab I);

(b) Copy of Marciante's visible emissions data sheets (Tab II);

(c) Proposed order and cover letter (Tab III);

(d) Notice of Violation and Order--in the matter Celotex Corporation (Perth Amboy, New Jersey) (March 17, 1975) (Tab IV);

(e) Letter, R. E. Rowe to U.S. Environmental Protection Agency (March 21, 1975) (Tab V);

(f) Celotex Corporation--Authorization for Expenditure (Tab VI).

K. Regional Contact:

Stephen A. Dvorkin, Esq., General Enforcement Branch, Enforcement and Regional Counsel Division, Region II, (212) 264-4434.

III a

REFERENCE NO. 30

BUREAU OF HAZARDOUS AND CHEMICAL WASTES

TELEPHONE COMPLAINT LOG SHEET

12-76

DATE 6/17/81 TIME 1600

CALL TAKEN BY D. Potts

* NAME OF COMPLAINTENT Tony Janin * CONFIDENTIAL !!! *

ADDRESS OF COMPLAINTENT Janin Corp.

PHONE NO. OF COMPLAINTENT 442-2860

NATURE OF COMPLAINT

Celotex Corp., Perth Amboy has deposited a load of asbestos in their dump site behind the building. Usually the asbestos is mixed with tar paper and roof tile, and buried. This dry asbestos is blowing in the wind spreading into water. Pile located near water - just put there, in the highest level of dump @ foot of Herbert St.

* Contact (above) Tony Janin before investigation. Wear asbestos CARTRIDGE, get samples!

LOCATION Celotex Corp., Market St.

TOWN Perth Amboy

COUNTY

ASSIGNED TO

REFERRED TO

- [ ] Water Resources
- [ ] Air Pollution
- [ ] Office of Hazardous Substances Control
- [ ] Other
- [ ] Commissioner's Office
- [ ] Stream Encroachment
- [ ] Local Officials

REFERENCE NO. 31

GEMS> I

CELOTEX (A)
LATITUDE 40:31:36 LONGITUDE 74:16: 8 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	2062	3216	15367	33546	30937	57053	142181
RING TOTALS	2062	3216	15367	33546	30937	57053	142181

GEMS> I

CELOTEX (A)
LATITUDE 40:31:36 LONGITUDE 74:16: 8 1980 HOUSING

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	761	1139	5466	11609	10488	18526	47989
RING TOTALS	761	1139	5466	11609	10488	18526	47989

Yik

Distance	Pop.	Housing
$\frac{1}{4}$	2,062	761
$\frac{1}{2}$	5,278	1900
1	20,645	7,366
2	54,141	18,975
3	85,128	24,463
4	142,181	47,989

REFERENCE NO. 32

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE ADMINISTRATION

TRENTON, 08625

BEATRICE S. TYLUTKI
DIRECTOR

NOTICE OF PROSECUTION

(Celotex Corporation)
(Jim Walter Company)
(Herbert and Market Streets)
(Perth Amboy, New Jersey 08862)

RE: N.J. Administrative Code Chapter 26 (Bureau of Solid Waste Management)

Violation Occurred On Premises Known As:

Block 88, Lot 1
Perth Amboy City
Middlesex County

Dear Sir:

Investigation by this Department on November 17, 1976, disclosed violation of N.J. Administrative Code 7:26-2.5.27. The maximum penalty that may be levied for each violation is $1,000 per day.

Prosecution is being withheld until January 31, 1977 to allow for correction of the violation and settlement of a claim for a penalty against you in the amount of $500. Should you desire to settle your claim, payment must be made on or before this date by money order or check drawn to the order of the New Jersey State Department of Environmental Protection. In the event payment is not made and/or the violation has not been corrected by the indicated date, this case will be referred to the Office of the Attorney General for prosecution.

N.J.A.C. 7:26-2.5.27 - The investigation disclosed that Celotex Corporation Solid Waste Disposal Area engaged in the disposal of solid waste and failed to maintain a daily record of all solid waste received at that facility.

DATED December 30, 1976

Beatrice S. Tylutki, Director
Solid Waste Administration

35

Reference IC

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE ADMINISTRATION

TRENTON, 08625

BEATRICE S. TYLUTKI
DIRECTOR

NOTICE OF PROSECUTION

(Celotex Corporation)
(Jim Walter Company)
(Herbert & Market Streets)
(Perth Amboy, N.J. 08862)

Violation Occurred On Premises Known As:

Celotex Corp. SWDA ID # 1216 A, Herbert & Market Streets, Block 88, Lot 1, Perth Amboy City, Middlesex County

Dear Sirs:

Investigation by this Department on July 26, 1977 and August 1, 1977 disclosed violations of N.J. Administrative Code 7:26-2.5.1, 2.5.5, and 2.5.13. The maximum penalty that may be levied for each violation is $3,000 per day.

The Solid Waste Administration will withhold prosecution until September 30, 1977 to allow for settlement of a claim for a penalty against you in the amount of $750. Should you desire to settle your claim, payment must be made on or before this date by money order or check drawn to the order of the New Jersey State Department of Environmental Protection.

The violation of N.J.A.C. 7:26-2.5.1 is to be corrected immediately. The violations of N.J.A.C. 7:26-2.5.5 and 2.5.13 are to be corrected by September 30, 1977.

In the event payment is not received and the violations are not corrected by the indicated dates, this matter will be referred to the Office of the Attorney General for prosecution.

N.J.A.C. 7:26-2.5.1 - The investigation disclosed that Celotex Corp. engaged in the disposal of solid waste on the above mentioned premises and maintained more than one active working face for the deposition of solid waste.

N.J.A.C. 7:26-2.5.5 - The investigation disclosed that Celotex Corp. engaged in the disposal of solid waste on the above mentioned premises and maintained side slopes in excess of the one foot vertical to two foot horizontal maximum ratio.

N.J.A.C. 7:26-2.5.13 - The investigation disclosed that Celotex Corp. engaged in the disposal of solid waste on the above mentioned premises and failed to cover all exposed surfaces of solid waste with daily cover material, or intermediate cover material, or final cover material at the conclusion of the days operation.

September 1, 1977
DATE

Beatrice S. Tylutki, Director
Solid Waste Administration

IC2 3-1

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625
SOLID WASTE ADMINISTRATION

JACK STANTON
DIRECTOR

NOTICE OF PROSECUTION

TO: The Celotex Corporation
Corporation Trust Co.,
Registered Agent
28 West State Street
Trenton, New Jersey 08608

Re: N.J.A.C. 7:26-1.1 et seq.
Violation Occurred at
Premises Known As:

Celotex Sanitary Landfill (1216A),
Herbert & Market Streets, Lot 1,
Block 88, Perth Amboy City,
Middlesex County, New Jersey
R 979

Investigations by this Department on April 23, 1981 disclosed violations of New Jersey Administrative Code 7:26-2.2.4. The maximum penalty that may be levied for each violation is $25,000 per day and injunctive relief.

Violations of this nature are to be corrected immediately. Prosecution is being withheld until August 14, 1981 to allow for settlement of a claim for penalty against you in the amount of $1,000.

In the event payment is not made and/or the violations have not been corrected, this case will be referred to the Office of the Attorney General for prosecution.

N.J.A.C. 7:26-2.2.4 ($1,000) - The investigation disclosed that you engaged in the disposal of solid waste on the above mentioned premises and failed to meet the operational requirements listed in 7:26-2; specifically, operating in an area other than on the engineeri design.

Dated July 15, 1981

Edward J. Londres, Assistant Director
Enforcement Branch

CERTIFIED MAIL

New Jersey Is An Equal Opportunity Employer

Su00648

1216A
2

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

SOLID WASTE ADMINISTRATION

NOTICE OF PROSECUTION

TO: The Celotex Corporation
Corporation Trust Co.
Registered Agent
28 West State St.
Trenton, NJ 08608

Re: N.J.A.C. 7:26-1.1 et seq.
Order Dated:
Violation Occurred at
Premises Known As:
P-1445
Facility #1216A, Market & Herbert Sts.
Lot 1, Block 88, Perth Amboy City
Middlesex County, NJ

The State Department of Environmental Protection has determined by investigation(s), inspection(s), or observation(s), made pursuant to the provisions of the New Jersey Solid Waste Management Act (NJSA 13:1E-1 et seq.) that on June 19, 1981 you did violate Title 7, Chapter 26, Subchapter 2 , Section 8(b).

N.J.A.C. 7:26-2.8(b) ($200) The investigation(s), inspection(s), or observation(s) disclosed that you failed to notify the Bureau of Solid Waste Management wherein smoldering, smoking or burning was occurring on an actual landfill.

NOW, THEREFORE, YOU ARE HEREBY ORDERED, to cease violation of said Subchapter(s) on premises owned, leased, operated or maintained by you immediately.

The maximum penalty that may be levied for each violation is $25,000 per day and injunctive relief.

Prosecution is being withheld until December 19, 1981 to allow for settlement of a claim for a penalty against you in the amount of $200. Should you desire to settle your claim, payment must be made on or before this date by money order or check drawn to the order of the New Jersey State Department of Environmental Protection. In the event payment is not made within the time specified, this case will be referred to the Office of the Attorney General for prosecution.

Dated: November 19, 1981

Edward J. Londres, Assistant Director
Enforcement Branch

CERTIFIED MAIL

New Jersey Is An Equal Opportunity Employer

IC

SW001702

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

SOLID WASTE ADMINISTRATION

NOTICE OF PROSECUTION

TO: The Celotex Corporation
Corporation Trust Co.,
Registered Agent
28 West State Street
Trenton, NJ 08608

RE: N.J.A.C. 7:26-1.1 et seq.
Violation Occurred at Premises
Known As:
P-1744
#1216A, Herbert & Market Streets, Lot 1
Block 88, Perth Amboy, Middlesex County
NJ

The State Department of Environmental Protection has determined by investigation(s) and inspection(s) made pursuant to the provisions of the New Jersey Solid Waste Management Act (NJSA 13:1E-1 et seq.) that on March 24, 1982 at approximately 9:00 a.m. you did violate Title 7, Chapter 26, Subchapter 2, Section 2 (d); 5(m).

N.J.A.C. 7:26-2.2(d)	$1,000	The investigation(s) and inspection(s) disclosed that you engaged in the disposal of solid waste on the above mentioned premises and failed to comply with all conditions and limitations set forth in the approved registration; specifically operating in an area determined to be off the engineering design and over elevation.
N.J.A.C. 7:26-2.5(m)	$1,000	The investigation(s) and inspection(s) disclosed that you engaged in the disposal of solid waste on the above mentioned premises and failed to cover all exposed surfaces of solid waste wit daily cover material, intermediate cove material, or final cover material at th conclusion of the day's operation; specifically cement demolition was observed.

NOW, THEREFORE, YOU ARE HEREBY ORDERED, to cease violation of said Subchapter(s) on premises owned, leased, operated or maintained by you immediately.

The maximum penalty that may be levied for each violation is $25,000 per day and injunctive relief.

Prosecution is being withheld until June 12, 1982 to allow for settlement of a claim for a penalty against you in the amount of $2,000. Should you desire to settle your claim, payment must be made on or before this date by money order or check drawn to the order of the New Jersey State Department of Environmental Protection. In the event payment is not made within the time specified, this case will be referred to the Office of the Attorney General for prosecution.

Date: May 12, 1982

Edward J. Londres

Edward J. Londres, Assistant Director
Enforcement Branch

CERTIFIED MAIL

REFERENCE NO. 33

NUS CORPORATION

POTENTIAL HAZARDOUS WASTE SITE

EXECUTIVE SUMMARY site inspection

Celotex (United Lead)	NJD055930549
Site Name	EPA Site ID Number
Market and Herbert Streets	02-8301-26
Address	TDD Number
Perth Amboy, NJ 08861	

Date of Site Visit: 3/30/83

SITE DESCRIPTION

This site has two areas of concern:

(1) An inactive landfill twenty-five acres in size. This portion is well covered and monitoring wells are being installed.

(2) Five acres where roofing shingle manufacture takes place. This area has an active drum storage facility with more than two hundred drums on site.

PRIORITY FOR FURTHER ACTION: High____ Medium____ Low X

RECOMMENDATIONS

Celotex is working closely with the State of New Jersey to close the landfill portion of the site. However, the drum storage area should be upgraded, and a RCRA inspection is recommended.

Prepared by: William Russell of NUS Corporation Date: 4/19/83

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Celotex (A)	Market and Herbert Sts.				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Perth Amboy	NJ	08861	Middlesex	023	15

09 COORDINATES: LATITUDE 40° 30' 43".N | LONGITUDE 74° 17' 40" W

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 3 / 30 / 83 (MONTH DAY YEAR)

02 SITE STATUS: ☒ ACTIVE ☐ INACTIVE

03 YEARS OF OPERATION: 1972 (BEGINNING YEAR) | 1975 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☒ B. EPA CONTRACTOR NUS Corporation (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm) ☐ E. STATE ☐ F. STATE CONTRACTOR ___ (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
William G. Russell	Chemical Engineer	NUS Corp.	(201) 225-6160
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Jerry Cirilli	Geologist	NUS Corp.	(201) 225-6160
Karen Sahatjian	Chemist	NUS Corp.	(201) 225-6160
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Cliff G. Obermeyer	Plant Manager	Herbert & Market St. Perth Amboy, NJ	(201) 826-6881
John Trontell	Plant Engineer	Herbert & Market Streets Perth Amboy, NJ	(201) 826-6881
Ron Sanders	Environmental Supervisor	1500 N. Dale Malry Hwy. Tampa, Fla	(813) 871-4223
Fred Baser	Dir. Envirn. Control	P.O. Box 1090 Hightstown, NJ	(609) 443-2411
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	10:30 am	Clear, 45° F, Breezy

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Mark Haulenbeek	EPA, Edison, NJ Region II Environmental Services Division	(201) 321-6776

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
William G. Russell	EPA	NUS FIT II	(201) 225-6160	3 / 31 / 83 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

(A) Former Site of United Lead Co., EPA Site number NJ D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS 73,000
NO. OF DRUMS 216

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS	73000	cu. yds.	
ACD	ACIDS			
BAS	BASES	11,800	gallons	Used in manufacturing process
MES	HEAVY METALS	unknown		Possible lead from former plant

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Asbestos		LF	unknown	
BAS	Potassium Dichromate	7778-50-9	DR	unknown	
MES	Chromium	7440-47-3	DR	unknown	
MES	Lead		LF	unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	Not applicable		FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Environmental Services Division file, Edison, NJ
NUS FIT II Site Inspection 3/30/83

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE NJ	02 SITE NUMBER D055930549 (A)

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential for groundwater contamination exists.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Landfill is adjacent to the Raritan River. Contaminants from the landfill can potentially reach the river.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 1,000
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential for air contamination exists from asbestos. No readings above background were recorded by the HNu photoionization detector.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential fire or explosive conditions exist.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Workers and surveyors have access to the landfill and may come in direct contact with contaminants.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 15 (Acres)
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Soil contamination from the landfill is possible.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential drinking water contamination exists.

01 ☒ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: 100
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Any workers on or adjacent to the landfill have a minimal potential for exposure to contaminants at the site.

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 1000
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Workers, visitors, and nearby residential population all have a minimal potential for exposure to contaminants at the site.

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead co., EPA Site number NJ - D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential damage to flora exists.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

No potential damage to fauna exists.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential contamination of food chain exists.

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES *(Spills, Runoff, Standing liquids, Leaking drums)* — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

The landfill was observed to well covered, and the drums were not leaking.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No damage to offsite property was observed.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential contamination of sewers, storm drains, or WWTPs exists.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

No potential for illegal or unauthorized dumping exists.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

No other hazards are known to exist.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1,000

IV. COMMENTS

Celotex is presently working with the state and the City of Perth Amboy to close the landfill. Plans for monitoring well installation at the landfill have been approved by the state.

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Site investigation, NUS FIT II 3/30/83

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site Number NJ D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☒ E. RCRA INTERIM STATUS	unknown			Application in progress
☐ F. SPCC PLAN				Part A received
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☒ I. OTHER (Specify) Landfill	1216A	unknown		Site number issued for
☐ J. NONE				landfill. Not known if state or local.

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	11,800	gallons
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	15	AC
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
☐ A. INCENERATION
☐ B. UNDERGROUND INJECTION
☐ C. CHEMICAL/PHYSICAL
☐ D. BIOLOGICAL
☐ E. WASTE OIL PROCESSING
☐ F. SOLVENT RECOVERY
☒ G. OTHER RECYCLING/RECOVERY
☐ H. OTHER (Specify)

05 OTHER

☒ A. BUILDINGS ON SITE

06 AREA OF SITE

30 (Acres)

07 COMMENTS

Celotex is working with the state to close the landfill. Plans for monitoring well installation have been approved. Applications for RCRA permit have been submitted.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☒ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

The landfill is secured by fences except for the area along the Raritan River. The drums are in two stacks. 216 drums have accumulated over the past 1.5 years. Celotex is working with the EPA on RCRA permits for drum storage.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO

02 COMMENTS Drums were not stored in an enclosed area separate from workers. Workers have access to the landfill. The site is well secured from public access by fences.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

EPA Environmental Services Division file, Edison, NJ

Site Investigation, NUS FIT II, 3/30/83

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. ☐	B. ☒	A. ☐	B. ☐	C. ☒	A. 8 (mi)
NON-COMMUNITY	C. ☐	D. ☐	D. ☐	E. ☐	F. ☐	B. (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☒ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 39,000

03 DISTANCE TO NEAREST DRINKING WATER WELL 8 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
25-50 (ft)	NE - SW	80 (ft)	15,000,000 (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Drinking wells are 320' ft deep located in Old Bridge. Some drinking wells 80-85' have been proposed. Five monitoring wells are planned for the landfill. See Figure 2, site map for proposed locations. These wells will be 25- 35'deep.

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS	☒ YES ☐ NO	COMMENTS Discharge to Raritan River and Raritan Bay.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Raritan River	☐	adjacent (mi)
Raritan Bay	☐	1.0 (mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 15,000 NO. OF PERSONS	B. 29,000 NO. OF PERSONS	C. 45,000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.01 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 9,000

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.01 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site e.g. rural village, densely populated urban area)

The population within the vicinity of the site is dense. There are several shops and residences within 0.25 miles of the site. The population remains dense throughout the entire city of Perth Amboy.

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ - D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☒ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
200 (ft)	surface (ft)	approx. 4.5

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10 (in)	2.5-3.0 (in)	1.0 %	North	1.0 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10 ☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. 1.0 (mi)

OTHER: B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: Not applicable

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. adjacent (mi)	B. .02 (mi)	C. _____ (mi)	D. 10.0 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is adjacent to Raritan River. A lumber yard, manufacturing plant, and residential housing also border the property. A Hess Oil tank farm is located just to the west of the property. The landfill is at a higher elevation than the surrounding areas.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S.G.S. 7.5 minute Topographic map of Perth Amboy
Perth Amboy Water Dept., Martin Langinol Director, 201-826-0590.
Fredrick H. Kurtz Inc., Property Sketch, NUS File, Edison, NJ
Site Investigation, NUS FIT II, 3/30/83

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site Number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER		No samples were taken	
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNu	No readings above background were recorded.
Radiation	No radiation was detected above background.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF NUS Corporation, Edison, NJ
(Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS NUS , Edison, NJ

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Not applicable

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Site Inspection, NUS , FIT II, 3/30/83

EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former Site of United Lead Co., EPA Site number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
The Celotex Corporation	00-509-2820	P.O. Box 22601		Tampa	FL	33622

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE
Jim Walter Co.	00-692-4310	1500 N. Dale Malry Hwy.		Tampa	FL	33622

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
N.L. Industries Inc.	00-131-7577	P.O. Box 1090		Hightstown	NJ	08520

IV. REALTY OWNER(S) (If applicable, list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME: Not applicable	02 D+B NUMBER:
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME: Not applicable	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
01 NAME	02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE
10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE
10 NAME	11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE
14 CITY	15 STATE / 16 ZIP CODE

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA site number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
The Celotex Corporation	00-509-2820

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Market & Herbert Sts.	

05 CITY	06 STATE	07 ZIP CODE
Perth Amboy	NJ	08861

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Not applicable			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Not applicable			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former Site of United Lead Co., EPA Site Number NJ-D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
Not applicable

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
Not applicable

01 ☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
No previous history

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ - D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☒ S. CAPPING/COVERING — 02 DATE 1977 — 03 AGENCY NJDEP
04 DESCRIPTION
The landfill has been adequately covered.

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Not applicable

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Not applicable

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Not applicable

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
There is no leachate treatment at the site.

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☒ 1. ACCESS TO SITE RESTRICTED — 02 DATE 1972 — 03 AGENCY Celotex
04 DESCRIPTION
Access to the site is restricted by fencing.

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
No previous history

01 ☒ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE 1983 — 03 AGENCY NJDEP
04 DESCRIPTION
The state has approved plans for monitoring well installations at the landfill and is monitoring the closure of the landfill.

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Site inspection, NUS FIT II, 3/30/83

EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former site is United Lead Co., EPA Site number NJ - D980530182

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NJ	D055930549 (A)

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

The state has regularly inspected the landfill area of the site. Plans for monitoring well installation have been approved, and negotiations to shut down the landfill are ongoing.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

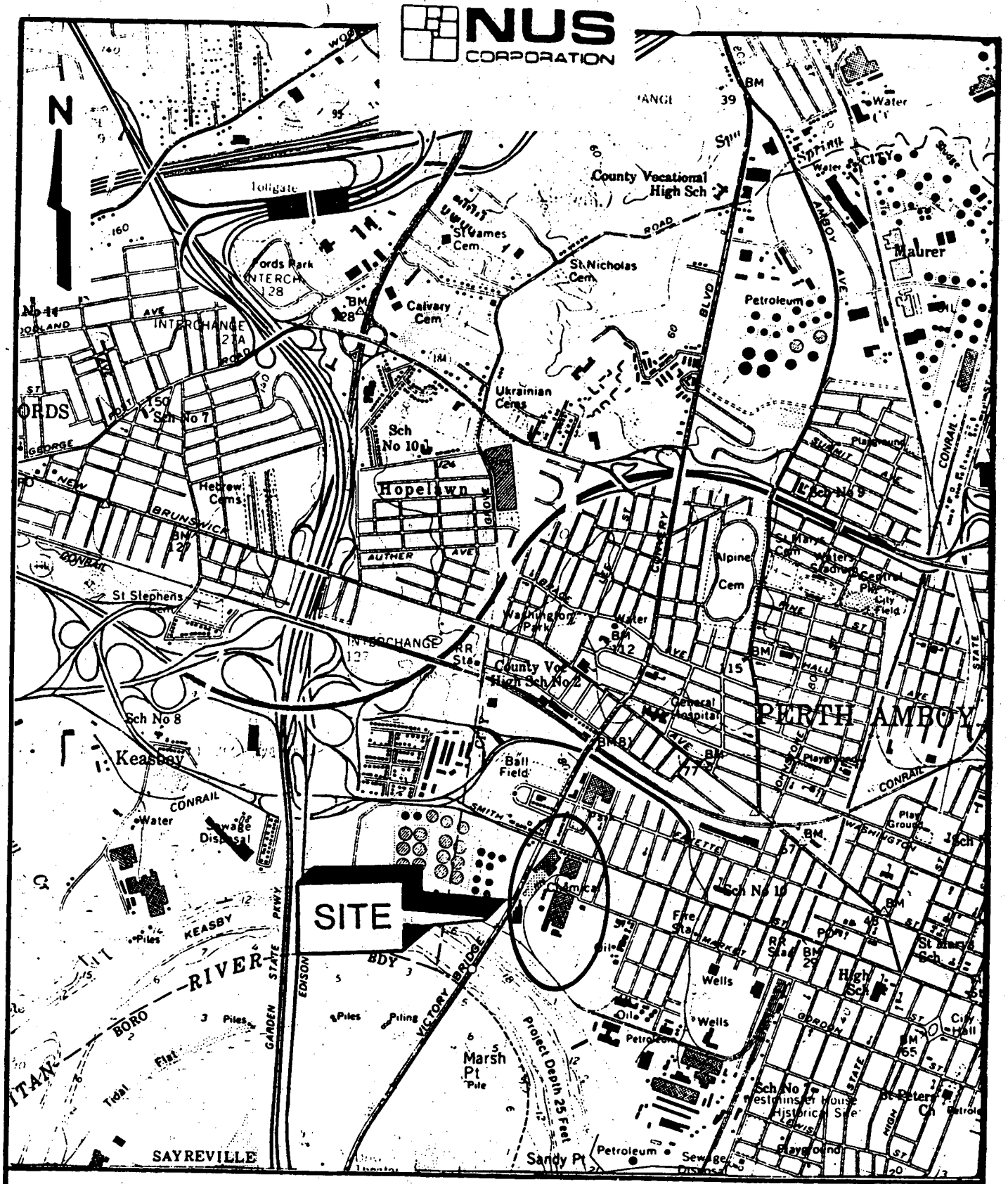
Site Inspection, NUS, FIT II, 3/30/83

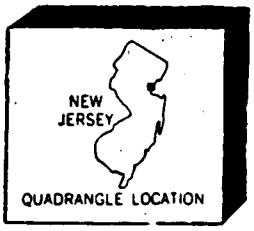
EPA Environmental Services Division file, Edison, NJ

EPA FORM 2070-13 (7-81)

(A) Former site of United Lead Co., EPA Site number NJ-D980530182

NUS CORPORATION





1000 0 1000 2000ft

1 24,000

FIGURE 1

CELOTEX

PERTH AMBOY, N.J.

SITE LOCATION MAP

NUS CORPORATION

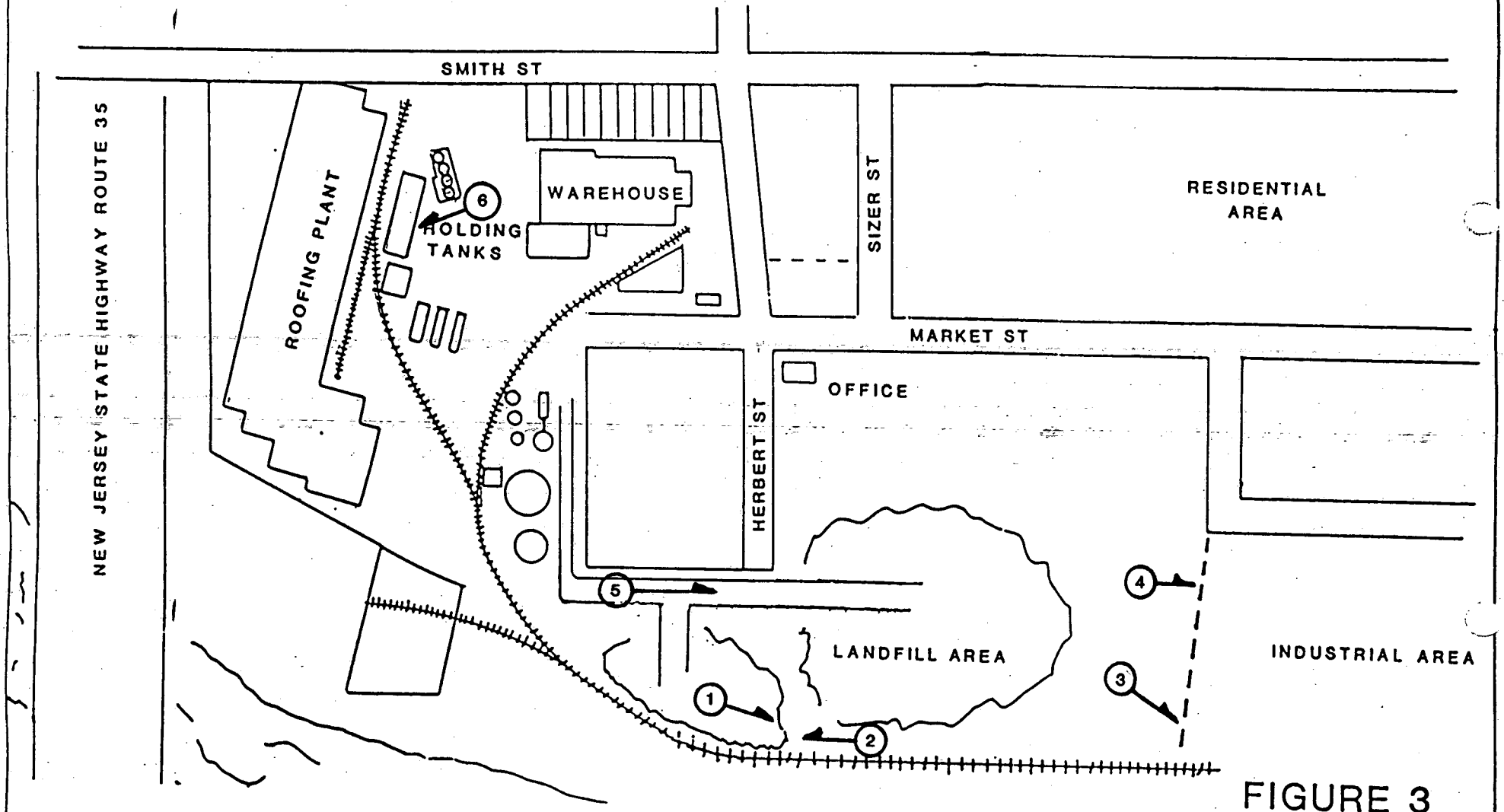


FIGURE 3

CELOTEX CORP

PERTH AMBOY, NJ

PHOTO LOCATION MAP

Index of Photographs

1. View from north west corner of Celotex Landfill facing south east.

2. View of landfill edge along Raritan River facing north west. Adjacent lumber yard and Hess Oil tank farm in background.

3. View of southern corner of landfill facing south east.

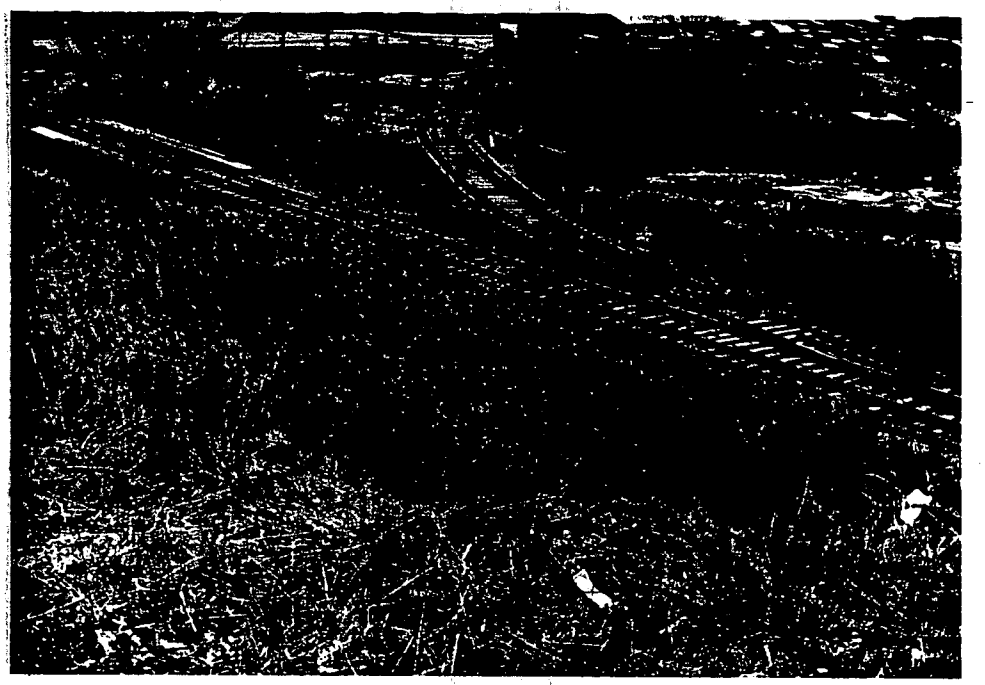
4. View of residential housing east of landfill.

5. View of landfill access road facing east. The road is adjacent to Madsen and Howell property line.

6. Stored drums on west site of site.

1. View from north west corner of Celotex Landfill facing south east.

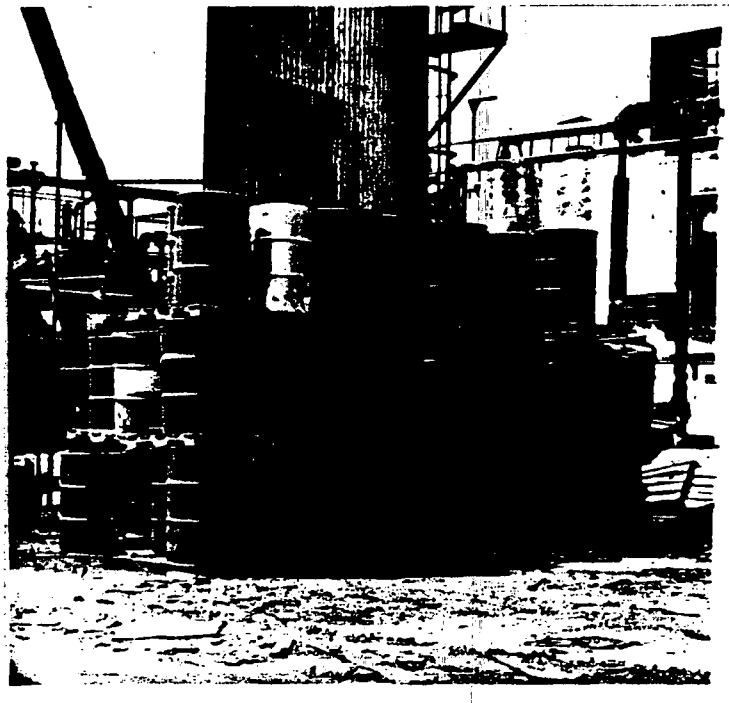
2. View of landfill edge along Raritan River facing north west. Adjacent lumber yard and Hess Oil tank farm in background



3. View of southern corner of landfill facing south east.

4. View of residential housing east of landfill.

5. View of landfill access road facing east. The road is adjacent to Madsen and Howell property line.



6. Stored drums on west side of site.

REFERENCE NO. 34

Change Order 825	Material Specification for EBONTEX EMULSION Lockland & Perth Amboy	3-8-17-5 Page 1 of 2 6/17/74 Replaces page dated 2/18/74

I. GENERAL

Ebontex Emulsion is a clay type emulsion for use as a base for B-1 CE, CE-18 Flat-Topp, Super Ebontex, Fiberflex, and private labeled products.

II. FORMULATION

Raw Material	Percentage	Typical 1000 Gallon Batch
Asphalt (a)	52.0 - 54.0	4540 Lbs.
Bentonite (b)	1.9 - 2.05	165 330
Potassium Dichromate (c)	0.026 -0.028	2.25
Acetic Acid 56% (d)	0.05	4.25
Water (e)	43.0 - 47.0	3688.50
	100.00	8400.0

NOTES:
(a) See specification 3-8-11-5
Lockland - D Flux - Gulf Oil Co.
Perth Amboy A-C 40 - Shell Oil
Grade 51-60 - Exxon Corp.
(b) See specification 3-8-9-5 (SPV 325 - American Colloid)
(c) Technical Grade
(d) Technical Grade 56%
(e) Condensate or softened

III. PROCESS

1. Asphalt Preparation

   a. Transfer asphalt from storage to conditioning tank.

   b. Adjust to 265 -275°F and hold constant throughout run.

2. Preparation of 5% Slurry

   a. Charge slurry tank with calculated amount of water and add bentonite slowly with agitator running.

   b. Agitate mixture for six hours or until clay is completely dispersed and uniformly swelled.

   c. Add potassium dichromate solution prepared at the rate of 1-1/2 lbs. of crystals per gallon of water. Continue agitation for 30 minutes.

   d. Adjust pH of slurry to 5.0 by the addition of the 56% acetic acid.

   e. Maintain slurry temperature at 90°F for use in colloid mill.

- DENOTES CHANGE

REFERENCE NO. 35

State of New Jersey
Department of Environmental Protection
Division of Water Resources
1474 Prospect Street, CN-029
Trenton, New Jersey 08625

FACT SHEET
FOR DRAFT NJPDES PERMIT TO DISCHARGE INTO THE WATERS OF THE STATE OF NEW JERSEY

Permit No. NJ0050750

Date: APR 08 1986

Name and Address of Applicant: Celotex Corporation
Herbert & Market Streets
Perth Amboy, Middlesex County
New Jersey 08862

Name and Address of Facility where Discharge Occurs: Celotex Corporation
Herbert & Market Streets
Perth Amboy, Middlesex County
New Jersey 08862

Receiving Water: Raritan River

Classification: SE1

I. DESCRIPTION OF FACILITY

The above named applicant has applied for a New Jersey Pollutant Discharge Elimination System (NJPDES) permit, to the State of New Jersey Department of Environmental Protection, Division of Water Resources to discharge into the designated receiving water. A location map of the facility is included on page 3.

The facility is involved in the production of roofing felt and asphalt roofing, Standard Industrial Codes (SIC) 2661 and 2952, respectively. Production wastes were previosly dumped to an on-site landfill. Presently there are two discharges, outfalls 001 and 002. Outfall 001 discharges stormwater from a pipe located under the landfill into the Raritan River (Max..192 MGD). Outfall 002 discharges Boiler Blowdown Water, Water Softener and Stormwater in a collection pit. This water is recycled and only the overflow (if any) gets discharged into the Raritan River, classified as SE1 waters.

This is a new permit and the facility has been classified as minor discharger by the New Jersey Department of Environmental Protection in accordance with the U.S. EPA rating criteria.

II. DESCRIPTION OF DRAFT PERMIT CONDITIONS

The existing and proposed effluent limitations and other pertinent information regarding the draft permit are described in the Permit Summary Tables (pages 4 and 5). Also included is a brief summary of the basis for each effluent limitation and other conditions in the draft permit (page 6).

III. VARIANCE OR MODIFICATION (if applicable)

N/A

IV. PROCEDURES FOR REACHING A FINAL DECISION ON THE DRAFT PERMIT

These procedures are set forth in N.J.A.C. 7:14A-7.1 et seq.. Included in the public notice are requirements for the submission of comments by a specified date, procedures for requesting a hearing and the nature of the hearing, and other procedures for participation in the final agency decision.

V. NJDEP CONTACT

Additional information concerning the Draft Permit may be obtained between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday from: Michael Russo, Industrial Permits Section, at (609)292-0407.

REFERENCE NO. 36

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

Permit No.	Issuance Date	Effective Date	Expiration Date
NJ0050750	October 22, 1986	December 1, 1986	November 30, 1991

Name and Address of Applicant	Location of Activity/Facility	Name and Address of Owner
The Celotex Corporation Herbert & Market Streets Perth Amboy, N.J. 08862	The Celotex Corporation Herbert & Market Streets Perth Amboy, N.J. 08862 (Middlesex County)	-Same as Applicant-

Issuing Division	Type of Permit	Statute(s)	Application No.
WATER RESOURCES	NJPDES SIU & DSW	N.J.A.C. 58:10A-1 et seq.	NJ0050750

This permit grants permission to:

Discharge stormwater runoff to the Raritan River and Sonman's Creek classified as SE1 waters, and discharge industrial wastewater from Asphalt roofing and Roofing felts manufacturing processes into the City of Perth Amboy's Sewage Treatment Plant, in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III and IV hereof.

This permit does not include any NJPDES discharge to ground water (DGW) permit required in accordance with N.J.A.C. 7:14A-1 et seq. Also, this permit does not constitute a waiver from obtaining a NJPDES-DGW permit as per Section 10.7 of the NJPDES Regulations. The Department reserves the right to modify this SIU & DSW permit at any time to include a DGW permit section.

Approved by the Department of Environmental Protection
By the authority of:
George G. McCann, P.E.
Acting Director
Division of Water Resources

Arnold Sciffman, Administrator
Water Quality Management

10/22/86
DATE

*The word permit means "approval, certification, registration, etc."

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

Form DEP-007 (8/83)

REFERENCE NO. 37

New Jersey Department of Environmental Protection
Division of Water Resources
Bureau of Industrial Waste Management
CN-029
Trenton, N.J. 08625
(609) 292-0407

PUBLIC NOTICE

JUN 17 1986

Notice is hereby given that the New Jersey Department of Environmental Protection, Division of Water Resources proposes to restrict and control the discharge of pollutants into the Perth Amboy Sewage Treatment Plant (STP) from:

The Celotex Corporation
Herbert & Market Streets,
Perth Amboy, N.J. 08862.

The applicant manufactures roofing felts and asphalt roofing products and is classified under SIC code numbers 2661 and 2952. The present application covers 72,950 gallons per day (gpd) of industrial wastewater. Reduction in wastewater discharge from 240,000 gpd in 1983 to the present 72,950 gpd has occured due to closing of half of their operation.

Industrial wastewater is treated for the control of fibers & solids in the water by screening and clarification processes. In all, 72,950 gpd of pretreated industrial wastewater is discharged through outfall DSN-001 to the Perth Amboy STP. This discharge does not includes sanitary wastewater.

Also, about 300 tons per month of solid waste is generated from process wastes, paper rejects and rejects from the roofing felt process, which is transported to the landfill by a licensed hauler.

This notice is being given to inform the public that NJDEP has prepared a draft NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NJPDES) permit (NJPDES Permit No. NJ0050750) in accordance with the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq.), which were promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.).

This is an existing facility, and issuance of a NJPDES permit is the enforcement mechanism by which pollutant discharges are brought into compliance with standards. The draft permit contains these conditions necessary to restrict the discharge of pollutants and protect the public health and environment.

The draft-permit prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 1474 Prospect Street in the Township of Ewing, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 a.m. and 4:00 p.m., Monday through Friday. Appointments for

inspection of the file may be scheduled by calling (609) 633-6620. Copies of the draft permit may be obtained for a nominal charge by contacting the Department.

Interested persons may submit written comments on the draft permit to the Administrator, Water Quality Management, at the address cited above. All comments must be submitted within 30 days of the date of this public notice. All persons, including applicants, who believe that any condition of this draft document is inappropriate or that the department's tentative decision to issue this draft permit is inappropriate, must raise all reasonably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the permit. At the close of the public comment period, the Department will issue or deny the permit. The Department will respond to all significant and timely comments when a final decision is issued. The applicant and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a non-adversarial public hearing on the draft permit document. This request shall state the nature of the issues to be raised in the proposed hearing as detailed above, and shall be submitted within 30 days of the date of this public notice to the Administrator, Water Quality Management, at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Additional information concerning the draft permit may be obtained between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday from: Richard Lulla at (609)-292-4860.

Arnold Schiffman
Administrator
Water Quality Management

WQM:rl217

NJPDES: NJ0050750

SIU PERMIT SUMMARY TABLE : OUTFALL DSN-001

COMPANY: The Celotex Corporation

LOCATION: Herbert & Market Streets
Perth Amboy, N.J. 08862

LAT: 40 - 31 - 36

LONG: 74 - 16 - 08

INDUSTRY TOTAL FLOW: 0.073 MGD

RECEIVING POTW: Perth Amboy STP

POTW NJPDES: NJ0023213

REVIEW ENGINEER: Richard Lulla

POTW DESIGN CAPACITY: 10.00 MGD

PARAMETER All units in mg/l unless otherwise specified	APPLICANT (***)	PERTH AMBOY DTW LIMITS	PERMIT LIMITS
FLOW (in MGD)	0.073	N/A	0.110
BOD5	940 (*)	210	77/115 (**)
COD	-	(*1)	-
TSS	220 (*)	N/A	115/173(**)
SULFATE as SO4	-	N/A	-
OIL & GREASE	6.2	100	100
TEMPERATURE DEGREE C	-	00-40	00-40
pH RANGE (S.U.)	6.6	5.5-8.0	5.5-8.0
HEAVY METALS	-	N/A	-
PENTACHLORO-PHENOL	B/A	-	2.67
TRICHOLORO-PHENOL	B/A	-	0.83

B/A means Believed Absent and N/A means Not Available.

(*) Exceeds the present discharge limitations.

(*1) Perth Amboy ordinance requires that 'No Unusual' discharge of COD should occur, no specific limitation promulgated.

(**) Discharge limitations for 'Monthly Average' and '7 Days Average', respectively.

(***) Data from the report submitted to the POTW for the period of 5/85 to 11/85.

SIU BASIS FOR MONITORING

Monitoring requirements for COD are for the calculation of the NJPDES fee and for the determination of pollutant loading.

The discharge limitations for the parameters BOD5 and TSS are based on the removal efficiency of Perth Amboy STP. Perth Amboy STP is a primary treatment facility. NJPDES discharge limitations for Perth Amboy STP for both BOD5 and TSS parameters are 30/45, 'monthly average' and '7 days average' discharges respectively. Since Perth Amboy STP is under sewer ban, and is not consistently meeting its NJPDES permit limitations, the discharge limitations regarding BOD5 and TSS are imposed for The Celotex Corporation. These are calculated by applying the STP's removal efficiency and NJPDES discharge limitations of the Perth Amboy STP as following :

BOD Limitations : $(x) - 0.61\ (x) = y$

$(x) = y/(0.39)$ (Equal to 77 & 115)

TSS Limitations : $(X) - 0.74\ (X) = Y$

$(X) = Y/(0.26)$ (Equal to 115 & 173)

(x) & (X) = Permit limitations for BOD5 & TSS respectively for The Celotex Corporation.

(y) & (Y) = NJPDES discharge limitations for BOD5 & TSS, for Perth Amboy STP, respectively.(30 mg/l for monthly average and 45 mg/l for '7 days average')

61% & 74% = Percentage 'Average removal efficiency' of Perth Amboy STP for BOD5 & TSS parameters, respectively. (Averaged for the period 10/85 to 1/86)

Discharge limitations for temperature, pH and 'Oil & Grease' parameters are based on the Sewer Use Ordinance of the City of Perth Amboy. Based on future monitoring data for the sulfate and heavy metals parameters, additional limitations may be imposed.

The limitation for the maximum daily flow is based on one and one half times the reported values and is intended to protect the POTW from any shock loading and plugging.

Limitations and monitoring requirements for the parameters Pentachlorophenol and Trichlorophenol are based on the applicable E.P.A. Categorical Standards 40 CFR 431. The concentration limits are calculated from their mass based limits as following :

Pentachlorophenol Limit = (0.032) x (14.4) / (y) = 2.67 mg/l.
Trichlorophenol Limit = (0.010) x (14.4) / (y) = 0.83 mg/l.
y = Wastewater discharged in K-gal. per ton of the product.

Average wastewater discharge by Celotex Corp.= 72.950 K-gal/day
Average production per day = 422 tons/day
(Averaged for the period 2/1/86 to 4/30/86, only available data)
So y = 72.950 / 422 => y = 0.1729 K-gal. per ton.

REFERENCE NO. 38

B. Strollo

ACO
SW01801

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 027, Trenton, N.J. 08625

JACK STANTON
DIRECTOR

LINO F. PEREIRA
DEPUTY DIRECTOR

August 26, 1982

H. Ronald Sanders
Manager of Environmental Affairs
Jim Walter Corporation
1500 North Dale Mabry Highway
Tampa, Florida 33607

RE: The Celotex Corporation Sanitary Landfill,
Perth Amboy, Middlesex County, New Jersey

Dear Mr. Sanders,

Enclosed, please find an Administrative Consent Order concerning the above referenced facility. Please review said Order and have it executed by the proper parties within fifteen (15) days of receipt.

Should you have any further questions concerning this matter, please contact Ms. Karen Jentis of my staff at (609) 984-5292.

Sincerely,

Ellen Radow

Ellen Radow, Esq.
Chief, Bureau of Compliance Management

ER:bm
Enclosure

c Karen Jentis
Walt Brown
Al Kaczoroski

CERTIFIED MAIL

ACO
SWC1801

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 027, Trenton, N.J. 08625

JACK STANTON
DIRECTOR

LINO F. PEREIRA
DEPUTY DIRECTOR

IN THE MATTER OF CELOTEX CORPORATION SANITARY LANDFILL, PERTH AMBOY, MIDDLESEX COUNTY FACILITY REGISTRATION NO. 1216A	)))))	ADMINISTRATIVE CONSENT ORDER

The following ADMINISTRATIVE CONSENT ORDER is issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (hereinafter, "the Department"), pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1, et seq. and duly delegated to the Assistant Director for Enforcement and Field Operations, Division of Waste Management.

FINDINGS

1. On July 15, 1981 and May 12, 1982, the Department issued Notices of Prosecution to the Celotex Corporation Sanitary Landfill (hereinafter, "the Company"), citing violations of N.J.A.C. 7:26-2.2(d); specifically operating in an area other than on the engineering design of record. The contents of said Notices of Prosecution are incorporated herein by reference.

2. On May 25, 1982, the parties hereto met to discuss methods by which to resolve the Notices of Prosecution in a manner satisfactory to the Department and the Company. Having successfully negotiated an agreement, the Company and the Department enter into this Administrative Consent Order without trial or adjudication or finding of issues of law and without admission of liability by the parties with respect to any such issues.

NOW, THEREFORE, by agreement of the parties, it is hereby ORDERED that Celotex Corporation, its principals, agents, employees, successors, assigns and any trustee in bankruptcy shall:

5.	Submit written waivers from all adjacent property owners, including but not limited to Conrail, Inc., stating that the property owners will not bring an action against the Company or the Department for the Company having deposited waste beyond the fifty (50) foot buffer zone required by N.J.A.C. 7:26-2.12(b)12.	September 1, 1982
6.	If and when the Department receives the waivers from the adjacent property owners referenced in Item No. 3 above, the Company shall remove waste from twenty-five (25) feet of all the boundaries of the landfill, leaving a twenty-five (25) foot buffer zone. If the Company fails to obtain these waivers, then the Company shall remove waste from fifty (50) feet of all boundaries of the landfill leaving a fifty (50) foot buffer zone.	September 30, 1982
7.	The waste removed from the boundaries of the landfill may be deposited in the excavation pit located on the site provided that there is five (5) feet of clean fill between the waste and groundwater. Therefore, the Company may begin depositing the waste in said pit upon Department approval. The pit may not be filled beyond the surrounding elevations, including the two (2) feet of final cover. If there is excess waste or if the Company fails to get Department approval to fill the excavation pit, the waste shall be deposited at a facility approved by the Department to accept that type of waste in collector/hauler vehicles licensed by the Department to carry that type of waste.	August 30, 1982
8.	Install three (3) passive methane gas vents. These wells shall be installed adjacent to the Janin Company building along the landfill road.	September 30, 1982

ITEM	TO BE COMPLETED BY
3. Cease acceptance of all waste	Immediately
4. Submit a closure plan to the Department which shows proper termination of the facility in an environmentally sound manner pursuant to N.J.A.C. 7:26-2.9. This plan shall include, but not be limited to, the following information:	September 15, 1982

a. covering the landfill with a minimum of two (2) feet of final cover material suitable to support vegetative growth. This cover shall be graded so as to facilitate drainage therefrom, and shall be revegetated by sowing with grass seed during the spring and/or fall in accordance with U.S. Soil Conservation Service Specifications or the recommendations of the county agricultural agent;

b. all final grades shall be established to facilitate surface water runoff and prevent the ponding of surface water; side slopes shall not exceed a vertical rise of one (1) foot for each horizontal distance of two (2) feet;

c. a map of the landfill which shows all boundaries of the site and identifying all adjacent property owners.

This Plan shall also include an implementation schedule which lists dates for the achievement of the provisions of the Plan. Upon approval of the Closure Plan by the Department, the Company shall immediately begin to implement the Plan.

9.	Submit to the Department a check or money order drawn to the order of the New Jersey State Department of Environmental Protection in the amount of $3,000 which represents the amount owing to the Department for two (2) outstanding Notices of Prosecution dated July 15, 1981 and May 12, 1982. The Company shall be entitled to a rebate of 90% of this amount upon a finding by the Department that the Company has complied with all of the terms of this Administrative Consent Order and that no further violation of N.J.A.C. 7:26-2.2(d) have occurred within six months following the effective date of this order.	Immediately

RESERVATION OF RIGHTS

This ADMINISTRATIVE CONSENT ORDER shall be fully enforceable in the New Jersey Superior Court having jurisdiction over the matter and signatory parties; it shall also constitute an Administrative Order pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1, et seq. and shall not prohibit, prevent or otherwise preclude the Department from taking whatever actions it deems appropriate to enforce the solid waste management laws of the State of New Jersey in any manner not inconsistent with the terms of this Administrative Consent Order, and shall not prohibit, prevent or otherwise preclude the Department from seeking full enforcement of the Administrative Order, upon a determination by the Department that the Celotex Corporation has failed to comply with any requirements of this Order.

Upon entry of this Administrative Consent Order, the Celotex Corporation hereby waives its right to a hearing on this Order.

DATED _____ _____
Keith A. Onsdorff, Assistant Director

DATED _____ BY _____
FOR:

_____
NAME (PRINT OR TYPE)

_____
TITLE

REFERENCE NO. 39

1216A

Jim Walter corporation

POST OFFICE BOX 22601 • 1500 NORTH DALE MABRY
TAMPA, FLORIDA 33622

March 20, 1986

PLEASE REPLY TO:
Environmental Engineering
10301 Ninth Street North
St. Petersburg, Florida 33702
(813) 576-4171

Mr. John A. Castner, P.E.
Chief, Bureau of Sanitary Landfill Closure
Division of Waste Management
New Jersey Department of Environmental Protection
32 E. Hanover Street
CN 023
Trenton, NJ 08625

RE: Celotex Landfill, Facility No. 1216A
Perth Amboy, Middlesex County

Dear Mr. Castner:

This letter is to update you on the progress toward closure of the subject facility. Two permits as required by your April 8, 1985 letter still remain outstanding.

The NJPDES permit for storm water discharge was filed with the Division of Water Resources on July 22, 1985. In November 1985, per telephone conversation with Mike Russo of that Division, a permit for existing storm water discharges 001 and 002 was to be written. Mr. Russo advised me on March 19, 1986 that the permit for 001 and 002 had been approved and should be mailed any day.

Discharge points 003, 004 and 005 will be new discharge points created by the landfill closure. Mr. Russo indicated that these should be added to the permit by amendment when closure construction is commenced. Celotex will apply for such an amendment when construction is started.

A Waterfront Development Permit has been the subject of much discussion with the Division of Coastal Resources. The primary subject was the need for a riparian grant before the permit could be granted. After lengthy discussions, the final determination was that the grant is required. Celotex has retained the services of the law firm of Toolan, Abbott & Domenichetti in Perth Amboy to pursue the grant and further attempt to speed the granting of a Waterfront Development Permit.

A major part of obtaining a riparian grant is up-to-date determination of property boundaries and review of past land ownership and grants. Celotex experienced considerable delays caused by the surveyor hired to perform this work. As a result, a new surveyor has now been hired with hopes that he will be more responsive and reliable.

REFERENCE NO. 40

NUS CORPORATION AND SUBSIDIARIES **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9001-10	September 17, 1990	945

DISTRIBUTION:

File - Celotex (A)

BETWEEN:	OF:	PHONE:
Mark Rudman	Celotex Corp.	(201) 826-6881

AND: Bob Cantagallo (NUS)

DISCUSSION:

I asked Mr Rudman about the waste storage pit on site. He informed me that solid wastes from the plant are still stored there and Perry County Recycling ~~pit~~ (RC) removes the waste periodically. I also asked him the name of the drainage creek on the eastern boundary of the site. He said he refers to it, as do others, by the name of Sonman's Creek.

ACTION ITEMS:

NUS 067 REVISED 0685