EXPANDED SITE INSPECTION
OF
DEVIL'S SWAMP
(LAD981155872)
EAST BATON ROUGE PARISH, LOUISIANA

FINAL REPORT

Prepared for

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LIST OF ABBREVIATIONS AND ACRONYMS

BHC	Benzene Hexachloride
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CLP	Contract Laboratory Program
%D	Percent Difference
EPA	U.S. Environmental Protection Agency
ESI	Expanded Site Inspection
FIT	Field Investigation Team
GC/MS	Gas Chromatograph/Mass Spectrometer
GFAA	Graphite Furnace Atomic Absorption
HCB	Hexachlorobenzene
HCBD	Hexachlorobutadiene
HRS	Hazard Ranking System
ICF	ICF Technology, Inc.
ICP	Inductively Coupled Plasma
IDW	Investigation-Derived Wastes
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
mg/kg	Milligrams per Kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSL	Mean Sea Level
ND	Not Detected
NPC	NPC Services, Inc.
NPL	National Priorities List
PA	Preliminary Assessment
PAH	Polynuclear Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
PRC	PRC Environmental Management, Inc.
QC	Quality Control
RAS	Routine Analytical Services
Rollins	Rollins Environmental Services, Inc.
RPD	Relative Percent Difference
%RSD	Percent Relative Standard Deviation
SI	Site Inspection
SDG	Sample Delivery Group
SQL	Sample Quantitation Limit
SVOC	Semivolatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TES 9	Technical Enforcement Support Contract No. 68-W9-0006
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WPCD	Water Pollution Control Division

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C06072 from the U.S. Environmental Protection Agency (EPA), Region 6, under Technical Enforcement Support Contract No. 68-W9-0006 (TES 9). The scope of work is to perform an expanded site inspection (ESI) of the Devil's Swamp site in East Baton Rouge Parish, Louisiana, and prepare a final ESI report.

The ESI is intended to be the final investigation in EPA's ongoing Hazard Ranking System (HRS) screening process of evaluating hazardous waste sites for further action in the Superfund Program. This ESI builds on the background information and analytical data collected during the preliminary assessment (PA) and site inspection (SI) of the Devil's Swamp site. The purpose of the ESI was to further define site waste characteristics, contaminant sources, and exposure pathways. This was accomplished by collecting and analyzing samples needed to support the EPA evaluation process for the site.

The main objectives of the ESI were to (1) document contamination related to the Devil's Swamp site and its associated wetlands, and (2) document sensitive terrestrial and aquatic environments. Contaminants of particular concern were chlorinated hydrocarbons, polychlorinated biphenyls (PCB), and metals. These substances are of particular concern because of their toxicity, persistence, bioaccumulation, and ecotoxicity.

PRC has compiled documentation from other sources, including (1) a comprehensive file search at EPA Region 6 files and the Louisiana Department of Environmental Quality (LDEQ), (2) interviews with LDEQ personnel, local citizens, and various state agencies, and (3) visual observations and measurements obtained during the sampling inspection.

The primary pathway of concern is surface water migration. Based on analytical data obtained from the samples collected, an observed release of hazardous substances to the surface water pathway has been documented.

2.0 SITE BACKGROUND

The Devil's Swamp site location, description, and previous investigations are summarized in this section. The site background information presented in this report was obtained from LDEQ and EPA Region 6 files, as well as from recent on-site reconnaissance and sampling conducted at the site.

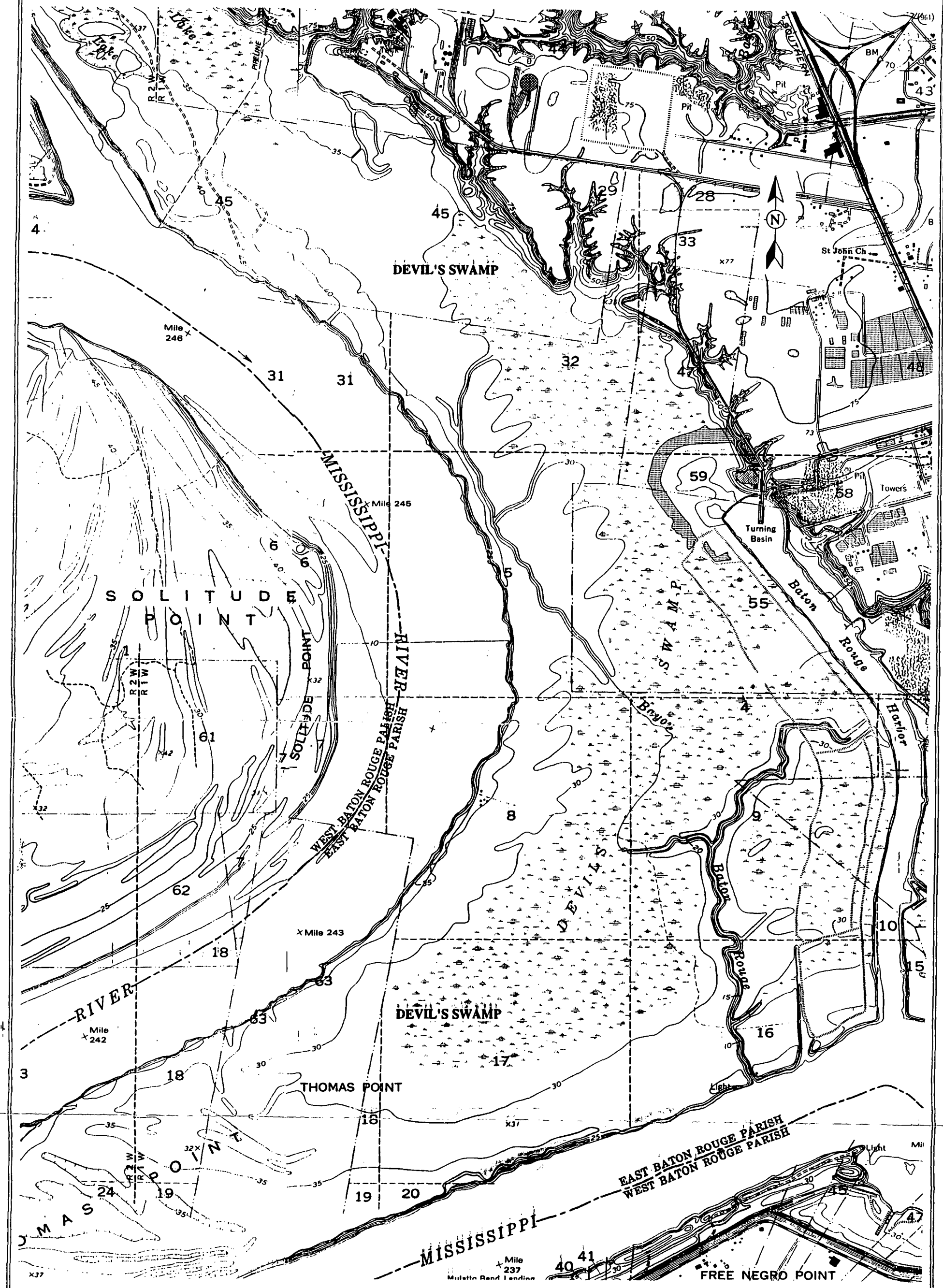
2.1 SITE LOCATION AND DESCRIPTION

The Devil's Swamp site is located in East Baton Rouge Parish, Louisiana, next to a heavily industrialized area (Figure 1) (Ref. 1). The site is bordered on the west and south by the Mississippi River, on the north by the Petro-Processors of Louisiana, Inc., National Priorities List (NPL) site, and on the east by the Rollins Environmental Services, Inc. (Rollins), facility and the Baton Rouge Harbor. The site is located in Sections 44, 45, 32, and 47 of Township 5 South, Range 1 West and Sections 55, 4, 9, and 8 of Township 6 South, Range 1 West. Devil's Swamp is mainly a wetlands area of about 3,500 acres receiving an average flow of 0.70 cubic feet per second (cfs) (Ref. 24) from Bayou Baton Rouge, which generally flows from west to southwest. The northern portion of Devil's Swamp flows into Devil's Swamp Lake, a man-made oxbow lake excavated in 1973 and located in the east-central part of Devil's Swamp. Flow continues from the lake into the southern portion of Devil's Swamp before emptying into the Mississippi River via the re-emerging channels of Bayou Baton Rouge. The area is also subject to seasonal backwater flooding from the Mississippi River.

2.2 SITE HISTORY

Investigations conducted by the EPA Field Investigation Team (FIT) in 1985 and by LDEQ in 1986 revealed chlorinated hydrocarbons including hexachlorobenzene (HCB), hexachlorobutadiene (HCBD), and metals contamination of soil, surface water, and sediments in Devil's Swamp (Ref. 2., pp. 1 to 26; Ref. 3, pp. 1 to 3). Also, the 1986 LDEQ investigation confirmed the presence of PCBs in sediments of Devil's Swamp Lake suspected by LDEQ to have originated from the Rollins facility (Ref. 4, pp. 1 to 9).

In March and June 1987, LDEQ analyzed fish tissue samples collected in Devil's Swamp Lake. Results confirmed the presence of HCB, HCBD, and PCBs (Ref. 25, p. 1). These fish tissue samples



DEVIL'S SWAMP
SCOTLANDVILLE, LOUISIANA
LAD981155872

FIGURE 1
SITE LOCATION MAP

PRC Environmental Management, Inc.

SOURCE: MODIFIED FROM USGS, SCOTLANDVILLE AND WALLS, LA QUADRANGLES, PHOTOREVISED 1980

exceeded the "emergency guidelines" (0.06 ppm) used by the Louisiana Department of Health and Human Resources (LDHHR) and LDEQ in assessing seafood contamination in the Calcasieu estuary (Ref. 25, p. 1).

3.0 GENERAL SITE CHARACTERISTICS

Current site and area conditions, including demography, land use, climatology, meteorology, topography, soils, geology, and hydrogeology, are characterized in this section.

3.1 DEMOGRAPHY AND LAND USE

The Devil's Swamp site consists of undeveloped wooded wetlands. No humans are known to inhabit the site. No residences are within 1/2 mile of the site. About 32 people live within a 1/2- to 1-mile radius of the site; 877 people live within a 1- to 2-mile radius; 3,222 people live within a 2- to 3-mile radius; and 16,117 people live within a 3- to 4-mile radius. The total population within a 4-mile radius of the swamp is 20,248 (Ref. 5). Historically, the area has been used for recreation, including hunting and fishing (Ref. 6, pp. 1, 2, 4, and 6; Ref. 7, p. 3; Ref. 8, p. 1). In 1987, LDEQ and the Louisiana Department of Health and Hospitals (LDHH) posted signs around parts of Devil's Swamp and Devil's Swamp Lake, into which Devil's Swamp empties, advising the public against physical contact with surface water from the area and against consuming fish caught in the lake (Ref 6, p. 1; Ref. 7, p. 7; Ref. 8, p. 1). In 1993, LDEQ and LDHH expanded the advisory to include all areas of Devil's Swamp, Devil's Swamp Lake, and Bayou Baton Rouge south of Hall-Buck Marine Road (Ref. 9).

3.2 CLIMATOLOGY AND METEOROLOGY

The climate in the Baton Rouge area is considered subtropical, with an average annual rainfall of about 54 inches (Ref. 10, p. 77). The annual net precipitation for the area is 20.12 inches (Ref. 11, p. 3). July and August are generally the wettest months; September and October are the driest months (Ref. 10, p. 77).

Mean temperatures for the Baton Rouge area range from 53°F in January to 82°F in July. January is

the coldest month, with an average daily low temperature of about 42°F. July is the warmest month, with an average high temperature of about 91°F. Winds are predominantly from the south (Ref. 10, p. 77).

3.3 TOPOGRAPHY

The Devil's Swamp site is a backwater swamp located next to the Mississippi River. The site has an average elevation of about 30 feet above mean sea level (MSL), and the northern portion of the site has an elevation of about 35 feet MSL. Surface water drainage in the swamp is to the south, and the drainage gradient is probably very small or nonexistent, except after floods (Ref. 1).

3.4 SOILS

The Devil's Swamp site is located on soils of the Sharkey-Mhoon-Crevasse Association. These soils consist of poorly drained to excessively drained clayey, loamy, and sandy soils of the Mississippi River floodplain (Ref. 10, p. 3).

3.5 GEOLOGY

The Baton Rouge area is underlain by marine and alluvial sediments associated with the Gulf Coastal Plain. The entire sediment sequence extends to a depth of about 3,000 feet. The site is located on Holocene-age alluvial sediments of the Mississippi River. The unconsolidated alluvial sediments consist of interbedded silt, sand, and clay strata that are discontinuous vertically and horizontally. The Holocene alluvial sediments are underlain by older Quaternary and Tertiary strata. These Quaternary and Tertiary strata, which are also of alluvial origin, are sand, silt, and clay strata that tend to be more horizontally and vertically continuous than the younger Holocene sediments (Ref. 12, pp. 7 to 9, and Figure 2).

3.6 HYDROGEOLOGY

Several significant groundwater aquifers are identified in the Quaternary and Tertiary sediments underlying the Devil's Swamp site. The aquifers in the site area, which typically consist of

continuous sand strata, are identified by their depths. Specifically, the aquifers in the site area are known locally as the 400-, 600-, 800-, 1000-, 1200-, 1500-, 1700-, 2000-, 2400- and 2800-foot sands (Ref. 12, p. 9).

Groundwater is the main source of drinking water in the Baton Rouge area. Most of the public supply wells in the Baton Rouge area are screened at depths greater than 2,000 feet (Ref. 13; Ref. 14; Ref. 15). However, some of the wells in the site area are screened in the 1200- and 1500-foot sands (Ref. 13; Ref. 14; Ref. 16, pp. 1 to 5, 9, and 16).

Groundwater is typically encountered at shallow depths—from a few inches to a few feet—in the surficial alluvial sediments. The shallow alluvial aquifers do not supply public drinking water to the site area.

4.0 ESI SAMPLING INSPECTION

Sampling conducted during the ESI of the Devil's Swamp site is outlined in this section. Development of the sampling strategy was based on (1) the known waste characteristics of the Devil's Swamp site, (2) analysis of the probable pathways of contaminant exposure, (3) the potential targets, and (4) the level of contamination expected in on-site areas. The objective of the field sampling activities was to document contamination related to the Devil's Swamp site. Of particular concern were chlorinated hydrocarbons, PCBs, and metals detected during previous investigations. These substances are of particular concern because of their toxicity, persistence, bioaccumulation, and ecotoxicity. Areas of known contamination were targeted for sediment and surface water sampling. Samples were also collected from suspect areas in which contamination has not been confirmed.

Forty-three samples were collected during the ESI (October 12 through October 28, 1992). This total included 36 sediment samples, 4 surface water samples, 2 field equipment rinsate samples, and 1 trip blank sample. All sediment samples were collected from a continuous discrete sample interval using dedicated sampling equipment. After the volatile organic fraction was collected from a discrete interval, the remaining media of the discrete sampling interval were (1) completely homogenized in a clean aluminum pan, and (2) indiscriminately transferred into sample containers for semivolatile organic compounds, metals, pesticide, and PCB analyses. Field activities were conducted in

accordance with the Devil's Swamp site-specific work plan, dated October 9, 1992. Any changes in procedure, sample location, or station number were documented in the field logbook. Contract Laboratory Program (CLP) Routine Analytical Services (RAS) were used to analyze all samples for Target Compound List (TCL) volatile and semivolatile organic compounds, pesticide organic compounds, and Target Analyte List (TAL) metals.

All samples collected by PRC during the ESI were packaged in accordance with EPA protocols found in EPA/540/P-87/001, "A Compendium of Superfund Field Operations Methods." All samples were shipped for overnight delivery to the appropriate CLP laboratories.

With the collection of sediment samples during the ESI, the contractor generated different types of investigation-derived wastes (IDW) that could contain Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) hazardous substances. The IDW included used personal protective equipment and disposable sampling equipment. Due to the potential liability of wastes, all generated IDW was managed in a manner consistent with EPA guidance set forth in EPA/540/G-91/009, "Management of Investigation-Derived Wastes during Site Inspections."

Photographs of sampling locations and site features are included as Appendix A. A tabular summary of sample numbers and analytical results is included as Appendix B. CLP data validation and chain-of-custody forms are presented in Appendix C.

4.1 SAMPLE LOCATIONS AND RATIONALE

Sample locations are described in Table 1 and illustrated in Figure 2.

4.2 SAMPLING RESULTS

Results of sampling conducted during the ESI of Devil's Swamp are discussed in the following subsections. Discussion is limited to contaminants that qualify as observed contamination. The

TABLE 1

SAMPLE DESCRIPTION

Sheet 1 of 3

Sample Number CLP Number	Sample Description
SS-01 FY401/MFZ701	Sediment sample was collected under 3 feet of surface water in southernmost Bayou Baton Rouge.
SS-02 FY402/MFZ702	Sediment sample was collected under 1.5 feet of surface water in southern Bayou Baton Rouge, about 50 feet east of SW-01.
SS-03 FY403/MFZ703	Sediment sample was collected under 1.5 feet of surface water in southern Bayou Baton Rouge, about 50 feet east of SW-01 (duplicate of SS-02).
SS-04 FY404/MFZ704	Sediment sample was collected under 1.5 feet of surface water in southern Bayou Baton Rouge, about 16 feet west of the east bank of Bayou Baton Rouge and 150 feet north-northwest of SS-02 and SS-03.
SS-05 FY407/MFZ707	Sediment sample was collected under 1 foot of surface water in southern Devil's Swamp, about 300 feet southwest of Devil's Swamp Lake.
SS-06 FY406/MFZ706	Sediment sample was collected under 1.5 feet of surface water in glade 2 of southern Devil's Swamp Lake, about 150 feet west of the main channel.
SS-07 FY500/MFZ801	Sediment sample was collected under 1 foot of surface water on the northern bank of glade 2, about 1,500 feet west of the entrance from the main channel.
SS-08 FY408/MFZ708	Sediment sample was collected under 0.5 foot of surface water on the southern bank of glade 2, about 350 feet west of the entrance from the main channel.
SS-09 FY409/MFZ709	Sediment sample was collected under 1 foot of surface water at the western end of glade 3.
SS-10 FY410/MFZ710	Sediment sample was collected under 0.5 foot of surface water on the southern bank of glade 3, near the northern side of beaver dam.
SS-11 FY411/MFZ711	Sediment sample was collected under 1.5 feet of surface water on the northeastern edge of glade 3 in southern Devil's Swamp.
SS-12 FY412/MFZ712	Sediment sample was collected under 2.5 feet of surface water in southern Bayou Baton Rouge, about 1,000 feet north of glade 3.
SS-13 FY413/MFZ713	Sediment sample was collected under 1.5 feet of surface water at the head of southern Bayou Baton Rouge, west of southern Devil's Swamp.
SS-14 FY414/MFZ714	Sediment sample was collected under 0.5 foot of surface water at the center of the small glade between glades 1 and 2, about 300 feet west from main channel.
SS-15 FY415/MFZ715	Sediment sample was collected under 0.5 foot of surface water in glade 1, about 300 feet west of the southern end of Devil's Swamp Lake.
SS-16 FY416/MFZ716	Sediment sample was collected under 2 feet of surface water in the center of the main channel between glades 7 and 8, about 20 feet west of beaver dam.

TABLE 1

SAMPLE DESCRIPTION

Sheet 2 of 3

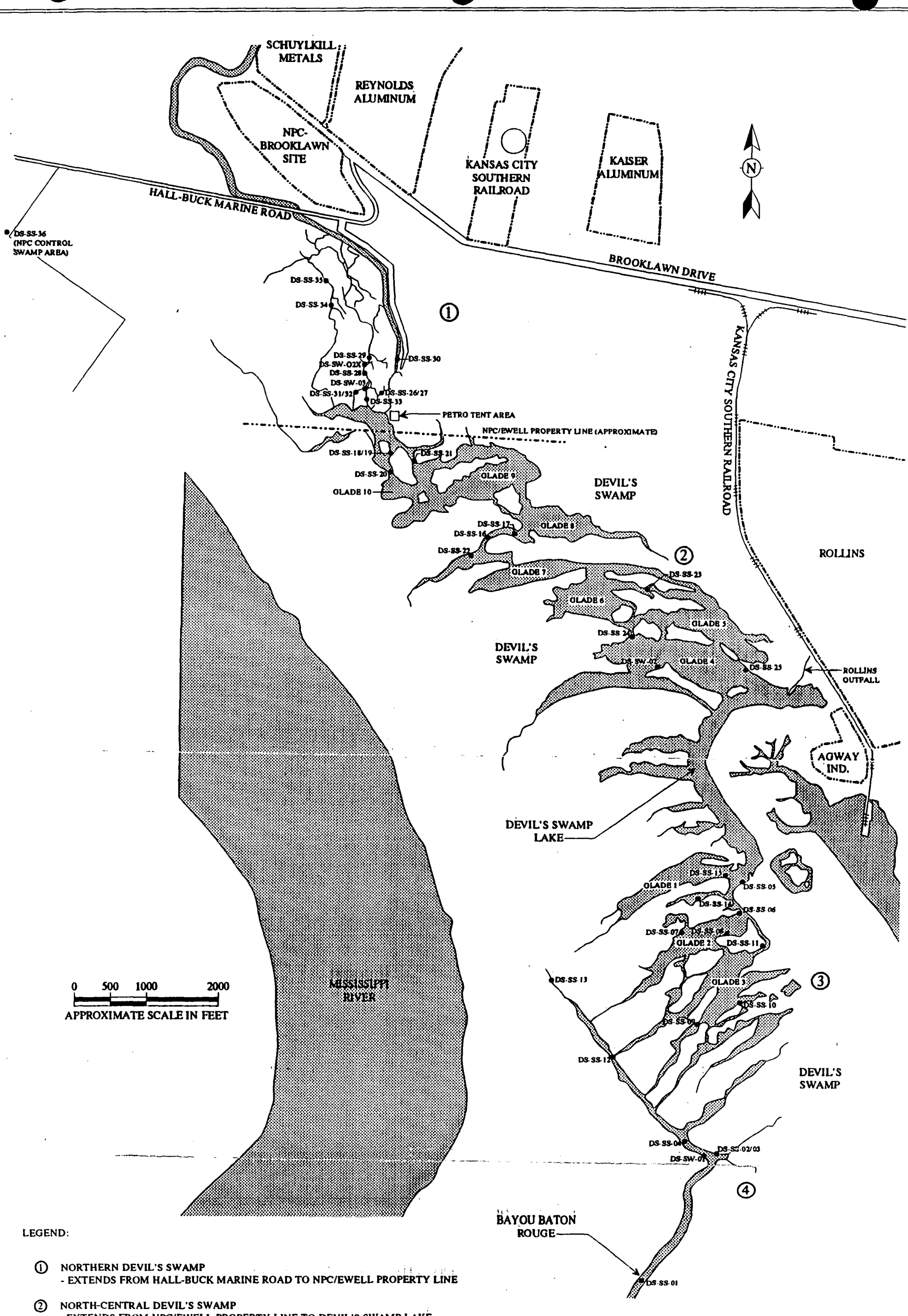
Sample Number CLP Number	Sample Description
SS-17 FY418/MFZ718	Sediment sample was collected under 2.5 feet of surface water in the center of the main channel between glades 7 and 8, about 45 feet west of beaver dam, and about 75 feet east of SS-16.
SS-18 FY418/MFZ718	Sediment sample was collected under 1.5 feet of surface water at the northeastern end of glade 10, about 200 feet southwest of NPC Services, Inc. (NPC) property line.
SS-19 FY419/MFZ719	Sediment sample was collected under 1.5 feet of surface water at the northeastern end of glade 10, about 200 feet southwest of NPC property line (duplicate of SS-18).
SS-20 FY420/MFZ720	Sediment sample was collected under 1.5 feet of surface water of the northwestern end of glade 10, about 400 feet southwest of NPC property line.
SS-21 FY421/MFZ721	Sediment sample was collected under 2 feet of surface water at the east side of island A, between NPC property line and glade 10.
SS-22 FY422/MFZ722	Sediment sample was collected under 1 foot of surface water off the northwest bank of glade 7, about 100 feet west of main channel to glade 8.
SS-23 FY423/MFZ723	Sediment sample was collected under 1 foot of surface water in the center of glade 6, about 500 feet southeast of beaver dam.
SS-24 FY424/MFZ724	Sediment sample was collected under 1.5 feet of surface water in the westernmost channel between glades 4 and 5.
SS-25 FY425/MFZ725	Sediment sample was collected under 2 feet of surface water off of the northeast bank of glade 4, about 100 feet west of north Devil's Swamp Lake and 40 feet west of Rollins new outfall pipeline.
SS-26 FY426/MFZ726	Sediment sample was collected under 1 foot of surface water, upgradient of NPC survey station 12.
SS-27 FY427/MFZ727	Sediment sample was collected under 1 foot of surface water, upgradient of NPC survey station 12 (duplicate of SS-26).
SS-28 FY428/MFZ728	Sediment sample was collected upgradient of NPC survey station 11.
SS-29 FY429/MFZ729	Sediment sample was collected about 50 feet downgradient from NPC survey station 10.
SS-30 FY430/MFZ730	Sediment sample was collected under 3 feet of surface water, about 50 feet upgradient of NPC survey station 9.
SS-31 FY431/MFZ731	Sediment sample was collected under 0.5 foot of surface water, about 10 feet west of NPC push boring location PB-157.

TABLE 1

SAMPLE DESCRIPTION

Sheet 3 of 3

Sample Number CLP Number	Sample Description
SS-32 FY432/MFZ732	Sediment sample was collected under 0.5 foot of surface water, about 10 feet west of NPC push boring location PB-157 (duplicate of SS-31).
SS-33 FY433/MFZ733	Sediment sample was collected about 5 feet south of NPC push boring location PB-426.
SS-34 FY434/MFZ734	Sediment sample was collected about 200 feet west of NPC soil boring location BB9-672S.
SS-35 FY435/MFZ735	Sediment sample was collected on the western Bayou Baton Rouge distributary channel at about NPC survey station 8.
SS-36 FY436/MFZ736	Sediment sample was collected about 1,500 feet east of Mississippi River, in Control Swamp at NPC Ecological Risk Assessment point 5.
SW-01 FY307/MFZ607	Surface water sample was collected 150 feet north of elbow in southern Bayou Baton Rouge, off the west bank (same location as SS-02 and SS-03).
SW-02 FY305/MFZ605	Surface water sample was collected in west-central portion of glade 4.
SW-02X FY437/MFZ737	Surface water sample was collected about 30 feet upstream of SS-31 and SS-32.
SW-03 FY438/MFZ738	Surface water sample was collected at NPC push boring location PB-123A.



LEGEND:

① NORTHERN DEVIL'S SWAMP
- EXTENDS FROM HALL-BUCK MARINE ROAD TO NPC/EWELL PROPERTY LINE

② NORTH-CENTRAL DEVIL'S SWAMP
- EXTENDS FROM NPC/EWELL PROPERTY LINE TO DEVIL'S SWAMP LAKE

③ SOUTHERN DEVIL'S SWAMP
- EXTENDS FROM DEVIL'S SWAMP LAKE TO SOUTHERN BAYOU BATON ROUGE

④ SOUTHERN BAYOU BATON ROUGE
- EXTENDS FROM BAYOU BATON ROUGE CHANNEL TO MISSISSIPPI RIVER

SOURCE: MODIFIED FROM AERO DATA CORPORATION, AERIAL PHOTOGRAPH, TAKEN APRIL 24, 1992

USGS, SCOTLANDVILLE, LA QUADRANGLE, PHOTOREVISED 1980

DEVIL'S SWAMP
SCOTLANDVILLE, LOUISIANA
LAD981155872

FIGURE 2
SAMPLE LOCATION MAP

PRC Environmental Management, Inc.

minimum standards to establish observed contamination by chemical analysis are defined by the following criteria (Ref. 17):

- Background concentration is not detected (or is less than the detection limit), and the sample measurement equals or exceeds the sample quantitation limit (SQL).
- Background concentration equals or exceeds the detection limit, and the sample measurement is three times or more above the background concentration and above the SQL.

The first step in determining the background concentration involved choosing the samples that appear to be representative of background concentrations. For each substance, the highest concentration among the chosen samples was used as the background concentration. At Devil's Swamp, samples 12, 13, and 36 were determined to be the most representative sediment samples; sample 02 was the most representative of the water samples. These samples were chosen, because (1) the limited number of organics detected were at low concentrations, and (2) the samples were collected away from areas of known or suspected waste migration.

For reference purposes, Devil's Swamp has been divided into four parts: (1) Northern, (2) North-Central, (3) Southern, and (4) Southern Bayou Baton Rouge. Northern Devil's Swamp encompasses the area from Hall-Buck Marine Road to the NPC Services, Inc. (NPC)/Ewell property line. North-Central Devil's Swamp extends from NPC/Ewell property line to Devil's Swamp Lake. Southern Devil's Swamp includes the area from Devil's Swamp Lake to the re-emerging channel of southern Bayou Baton Rouge. Southern Bayou Baton Rouge contains the area from southwest of glade 3 in southern Devil's Swamp to the Mississippi River.

4.2.1 Northern Devil's Swamp

Chemical analysis of sediment samples SS-26 through SS-36 detected organic and inorganic constituents at concentrations that qualify as observed contamination (Tables 2 and 3). The highest contaminant concentration was detected at sample location SS-28, which was collected upstream of NPC survey station 11. HCBD qualified as observed contamination at seven of 11 sampling locations (SS-28 through SS-34), with concentrations ranging from 4,800 to 12,000,000 μg/kg. Other organic

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 1 of 6

Location CLP Sample ID		Sample SS-26 FY426		Sample SS-27 FY427		Sample SS-28 FY428		Sample SS-29 FY429		Sample SS-30 FY430		Sample SS-31 FY431	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	14	31	14	63	20,000	14,000J	16	27	96	170J	28,000	ND
Acenaphthene	ND	460	ND	440	ND	16,000	2,500J	520	80J	630	ND	23,000	2,300J
Acenaphthylene	ND	460	ND	440	ND	16,000	ND	520	ND	630	ND	23,000	ND
Anthracene	ND	460	ND	440	ND	16,000	ND	520	ND	630	ND	23,000	ND
Aroclor-1248	ND	230	ND	220	ND	54,000	ND	520	ND	320	ND	7,700	ND
Aroclor-1254	ND	230	ND	220	ND	54,000	ND	520	ND	320	ND	7,700	ND
Aroclor-1260	ND	230	ND	220	ND	54,000	ND	520	ND	320	ND	7,700	ND
Benzo(a)anthracene	ND	460	52J	440	38J	16,000	1,300J	520	58J	630	ND	23,000	1,500J
Benzo(b)fluoranthene	ND	460	86J	440	55J	16,000	ND	520	81J	630	ND	23,000	ND
Benzo(k)fluoranthene	ND	460	ND	440	ND	16,000	ND	520	ND	630	ND	23,000	ND
Benzo(a)pyrene	ND	460	64J	440	47J	16,000	ND	520	40J	630	ND	23,000	ND
beta-BHC	ND	12	ND	11	ND	2,800	ND	27	ND	16	ND	400	ND
Carbazole	ND	460	ND	440	ND	16,000	ND	520	ND	630	ND	23,000	ND
Carbon Disulfide	ND	14	ND	14	ND	20,000	ND	16	ND	96	ND	28,000	ND
gamma-Chlordane	ND	12	ND	11	ND	2,800	ND	27	ND	16	ND	400	ND
Chlorobenzene	ND	14	100	14	170	20,000	ND	16	140	96	1,600	28,000	ND
Chrysene	ND	460	97J	440	64J	16,000	2,800J	520	110J	630	ND	23,000	4,000J
4,4'-DDD	ND	23	ND	22	ND	5,400	ND	52	ND	32	ND	770	ND
4,4'-DDE	ND	23	ND	22	ND	5,400	ND	52	ND	32	ND	770	ND

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 2 of 6

Location CLP Sample ID		Sample SS-26 FY426		Sample SS-27 FY427		Sample SS-28 FY428		Sample SS-29 FY429		Sample SS-30 FY430		Sample SS-31 FY431	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
1,2-Dichlorobenzene	ND	460	37J	440	27J	16,000	3,100J	520	80J	630	76J	23,000	3,600J
1,3-Dichlorobenzene	ND	460	460J	440	380J	16,000	5,400J	520	850	630	410J	23,000	8,300J
1,4-Dichlorobenzene	ND	460	930	440	850	16,000	6,100J	520	600	630	1,000	23,000	8,300J
Endrin	ND	23	ND	22	ND	5,400	ND	52	ND	32	ND	770	ND
Endrin Ketone	ND	23	ND	22	ND	5,400	ND	52	ND	32	ND	770	ND
Endosulfan I	ND	12	ND	11	ND	2,800	ND	27	ND	16	ND	400	ND
Ethylbenzene	ND	14	6J	14	4J	20,000	ND	16	2J	96	140	28,000	ND
Fluoranthene	36	460	96J	440	58J	16,000	5,700J	520	210J	630	54J	23,000	7,500J
Fluorene	ND	460	ND	440	ND	16,000	ND	520	310J	630	ND	23,000	13,000J
Heptachlor Epoxide	ND	12	ND	11	ND	2,800	ND	27	ND	16	ND	400	ND
Hexachlorobenzene	ND	1,900	10,000D	1,800	6,400D	1,600,000	380,000DJ	52,000	12,000DJ	1,300	7,300D	2,300,000	470,000DJ
Hexachlorobutadiene	ND	460	ND	440	ND	1,600,000	10,000,000D	52,000	260,000D	630	4,800	2,300,000	11,000,000D
Hexachloroethane	ND	460	ND	440	ND	16,000	76,000	520	ND	630	ND	23,000	100,000
2-Methylnaphthalene	ND	460	ND	440	ND	16,000	12,000J	520	260J	630	ND	23,000	13,000J
Naphthalene	ND	460	ND	440	ND	16,000	50,000	520	650	630	37J	23,000	49,000
N-nitrosodiphenylamine	ND	460	ND	440	ND	16,000	ND	520	ND	630	ND	23,000	ND
Phenanthrene	85	460	180J	440	140J	1,600,000	250,000DJ	52,000	7,800DJ	630	190J	2,300,000	340,000DJ
Pyrene	33	460	130J	440	74J	16,000	6,600J	520	240J	630	59J	23,000	10,000J
1,1,2,2-Tetrachloroethane	ND	14	ND	14	ND	20,000	33,000	16	ND	96	ND	28,000	9,900J

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 3 of 6

Location / CLP Sample ID		Sample SS-26 FY426		Sample SS-27 FY427		Sample SS-28 FY428		Sample SS-29 FY429		Sample SS-30 FY430		Sample SS-31 FY431	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Tetrachloroethene	ND	14	ND	14	ND	20,000	220,000	16	ND	96	ND	28,000	220,000
1,2,4-Trichlorobenzene	ND	460	58J	440	ND	16,000	75,000	520	2,100	630	140J	23,000	84,000
1,1,1-Trichloroethane	ND	14	ND	14	ND	20,000	ND	16	ND	96	ND	28,000	ND
1,1,2-Trichloroethane	ND	14	ND	14	ND	20,000	41,000	16	ND	96	ND	28,000	ND
Trichloroethene	ND	14	ND	14	ND	20,000	40,000	16	ND	96	ND	28,000	36,000
Toluene	ND	14	9J	14	16	20,000	4,400J	16	15J	96	84J	28,000	ND
Xylenes (total)	ND	14	8J	14	15	20,000	ND	16	9J	96	110	28,000	ND

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 4 of 6

Location CLP Sample ID		Sample SS-32 FY432		Sample SS-33 FY433		Sample SS-34 FY434		Sample SS-35 FY435		Sample SS-36 FY436	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	26,000	ND	2,300	ND	16	ND	13	ND	19	24
Acenaphthene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Acenaphthylene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Anthracene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Aroclor-1248	ND	7,200	ND	6,300	ND	5,200	ND	44	ND	61	ND
Aroclor-1254	ND	7,200	ND	6,300	ND	5,200	ND	44	ND	61	ND
Aroclor-1260	ND	7,200	ND	6,300	ND	5,200	ND	44	ND	61	ND
Benzene	ND	26,000	ND	2,300	ND	16	ND	13	ND	19	ND
Benzo(a)anthracene	ND	22,000	1,900J	19,000	ND	260,000	ND	440	ND	610	ND
Benzo(b)fluoranthene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Benzo(k)fluoranthene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Benzo(g,h,i)perylene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Benzo(a)pyrene	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
beta-BHC	ND	370	ND	330	ND	270	ND	2.3	ND	3.1	ND
Carbazole	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Carbon Disulfide	ND	26,000	ND	2,300	ND	16	ND	13	ND	19	ND
gamma-Chlordane	ND	370	ND	330	ND	270	ND	2.3	ND	3.1	ND
Chlorobenzene	ND	26,000	ND	2,300	2,300J	16	ND	13	ND	19	ND
Chrysene	ND	22,000	2,700J	19,000	ND	260,000	ND	440	ND	610	ND

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 5 of 6

Location CLP Sample ID		Sample SS-32 FY432		Sample SS-33 FY433		Sample SS-34 FY434		Sample SS-35 FY435		Sample SS-36 FY436	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
4,4'-DDD	ND	720	ND	630	ND	520	ND	4.4	ND	6.1	ND
4,4'-DDE	ND	720	ND	630	ND	520	ND	4.4	ND	6.1	ND
1,2-Dichlorobenzene	ND	22,000	3,100J	19,000	ND	260,000	ND	440	ND	610	ND
1,3-Dichlorobenzene	ND	22,000	7,200J	19,000	4,900J	260,000	ND	440	ND	610	ND
1,4-Dichlorobenzene	ND	22,000	7,600J	19,000	4,700J	260,000	ND	440	ND	610	ND
Endrin	ND	720	ND	630	ND	520	ND	4.4	ND	6.1	ND
Endrin Ketone	ND	720	ND	630	ND	520	ND	4.4	ND	6.1	ND
Endosulfan I	ND	370	ND	330	ND	270	ND	2.3	ND	3.1	ND
Ethylbenzene	ND	26,000	ND	2,300	1,200J	16	ND	13	ND	19	ND
Fluoranthene	ND	22,000	6,900J	19,000	1,300J	260,000	ND	440	ND	610	ND
Fluorene	36	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Heptachlor Epoxide	ND	370	ND	330	ND	270	ND	2.3	ND	3.1	ND
Hexachlorobenzene	ND	2,200,000	460,000DJ	19,000	120,000	260,000	250,000J	440	ND	610	ND
Hexachlorobutadiene	ND	2,200,000	12,000,000D	190,000	1,500,000D	1,000,000	4,200,000D	440	190J	610	ND
Hexachloroethane	ND	22,000	110,000	19,000	ND	260,000	ND	440	ND	610	ND
2-Methylnaphthalene	ND	22,000	12,000J	19,000	ND	260,000	ND	440	ND	610	ND
Naphthalene	ND	22,000	46,000	19,000	ND	260,000	ND	440	ND	610	ND
N-nitrosodiphenylamine	ND	22,000	ND	19,000	ND	260,000	ND	440	ND	610	ND
Phenanthrene	85	2,200,000	270,000DJ	19,000	30,000	260,000	150,000J	440	38J	610	85J

TABLE 2

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 6 of 6

Location CLP Sample ID		Sample SS-32 FY432		Sample SS-33 FY433		Sample SS-34 FY434		Sample SS-35 FY435		Sample SS-36 FY436	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**
Pyrene	33	22,000	7,900J	19,000	3,000J	260,000	ND	440	ND	610	ND
1,1,2,2-Tetrachloroethane	ND	26,000	8,000J	2,300	ND	16	ND	13	ND	19	ND
Tetrachloroethene	ND	26,000	210,000	2,300	ND	16	6J	13	ND	19	ND
1,2,4-Trichlorobenzene	ND	22,000	81,000	19,000	13,000J	260,000	ND	440	ND	610	ND
1,1,1-Trichloroethane	ND	26,000	ND	2,300	ND	16	ND	13	ND	19	ND
1,1,2-Trichloroethane	ND	26,000	ND	2,300	ND	16	ND	13	ND	19	ND
Trichloroethene	ND	26,000	40,000	2,300	ND	16	ND	13	ND	19	ND
Toluene	ND	26,000	ND	2,300	ND	16	4J	13	ND	19	ND
Xylenes (total)	ND	26,000	ND	2,300	ND	16	2J	13	ND	19	ND

Notes:

All concentrations are expressed in terms of micrograms/kilogram ($\mu g/kg$).

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

J = Estimated concentration

CLP = Contract Laboratory Program

D = Concentration exceeded calibration range of gas chromatography/mass spectrometer (GC/MS)

SQL = Sample quantitation limit

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE 3

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 1 of 2

Location / CLP Sample ID		Sample SS-26 MFZ726		Sample SS-27 MFZ727		Sample SS-28 MFZ728		Sample SS-29 MFZ729		Sample SS-30 MFZ730		Sample SS-31 MFZ731	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Arsenic	17.7	2.8	10.7	2.9	15.1	3.3	10.2	3.1	8.2	3.2	4.3	3.8	21.7
Cadmium	3.1	1.4	8.7	1.4	11.4	1.7	10.3	1.6	3.0	1.6	1.0	1.9	43.9
Chromium	30.4	2.8	6.2	2.9	7.2	3.3	11.5	3.1	13.2	3.2	14.8	3.8	36.0
Lead	28.7	0.85	64.1	0.86	73.0	1.0	168	0.94	30	1.0	24.9	1.2	246
Mercury	ND	0.10	ND	0.11	ND	0.14	ND	0.12	ND	0.13	ND	0.17	ND
Zinc	113	5.6	69.9	5.7	102	6.7	80.9	6.2	81.6	6.5	43.2	7.6	207

TABLE 3

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTHERN DEVIL'S SWAMP

Sheet 2 of 2

Location CLP Sample ID		Sample SS-32 MFZ732		Sample SS-33 MFZ733		Sample SS-34 MFZ734		Sample SS-35 MFZ735		Sample SS-36 MFZ736	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Arsenic	17.7	4.0	21.6	3.5	7.6	2.7	3.8	2.8	4.2	2.9	2.2J
Cadmium	3.1	2.0	62.3	1.7	9.9	1.3	1.6	1.4	33.3	0.60	ND
Chromium	30.4	4.0	15.9	3.5	10.6	2.7	5.3	2.8	13.4	2.9	18.7
Lead	28.7	1.2	212	1.0	119	0.8	40.6	0.84	310	0.86	28.7
Mercury	ND	0.15	ND	0.14	ND	0.09	ND	0.14	0.19	0.13	ND
Zinc	113	8.1	271	6.9	52.4	5.3	24.3	5.6	122	5.7	69.6

Notes:

All concentrations are expressed in terms of milligrams/kilogram (mg/kg).

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

CLP = Contract Laboratory Program

SQL = Sample quantitation limit

= Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

constituents meeting conditions for observed contamination are the following:

- Chlorobenzene (SS-26, SS-27, SS-29, and SS-30)
- 1,3-Dichlorobenzene (SS-29)
- 1,4-Dichlorobenzene (SS-26, SS-27, SS-29, and SS-30)
- Ethylbenzene (SS-30)
- HCB (SS-26, SS-27, SS-30, and SS-33)
- Hexachloroethane (SS-28, SS-31, and SS-32)
- Naphthalene (SS-28, SS-29, SS-31, and SS-32)
- Phenanthrene (SS-33)
- 1,1,2,2-Tetrachloroethane (SS-28)
- Tetrachloroethene (SS-28, SS-31, and SS-32)
- 1,2,4-Trichlorobenzene (SS-28, SS-31, and SS-32)
- 1,1,2-Trichloroethane (SS-28)
- Trichloroethene (SS-28, SS-31, and SS-32)
- Toluene (SS-27)
- Xylenes (total) (SS-27 and SS-30)

Cadmium, lead, and mercury were detected in concentrations that qualify as observed contamination. Cadmium was detected in sediment samples SS-27, SS-28, SS-31 through SS-33, and SS-35 at concentrations ranging from 9.9 to 62.3 mg/kg. Lead concentrations ranging from 119 to 310 mg/kg were detected in SS-28, SS-31, through SS-33, and SS-35. A concentration of 0.19 mg/kg of mercury was detected in SS-35.

Two surface water samples (SW-02X and SW-03) were collected from Northern Devil's Swamp. HCBD and 1,2-dichloroethane were detected in SW-02X at concentrations high enough to establish an observed release (Table 4). Mercury (SW-02X and SW-03), and zinc (SW03) were all detected at

TABLE 4

ORGANIC CONTAMINANTS DETECTED IN SURFACE WATER OF NORTHERN DEVIL'S SWAMP

Location CLP Sample ID		Sample SW-02X FY437		Sample SW-03 FY438	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**
Chloroform	ND	10	2J	10	ND
1,3-Dichlorobenzene	ND	10	3J	10	ND
1,4-Dichlorobenzene	ND	10	3J	10	ND
1,2-Dichloroethene (total)	ND	10	25	10	ND
Heptachlor	ND	0.050	ND	0.050	ND
Hexachlorobutadiene	ND	20	74D	10	ND
1,1,2,2-Tetrachloroethane	ND	10	3J	10	ND
Tetrachloroethene	ND	10	8J	10	ND
1,2,4-Trichlorobenzene	ND	10	4J	10	ND
Trichloroethene	ND	10	7J	10	ND

Notes:

All concentrations are expressed in terms of micrograms/litre (μg/l).

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

D = Concentration exceeded calibration range of gas chromatograph/mass spectrometer (GC/MS)

J = Estimated concentration

CLP = Contract Laboratory Program

SQL = Sample quantitation limit

= Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

concentrations qualifying as observed contamination (Table 5).

4.2.2 North-Central Devil's Swamp

Chemical analysis of sediment samples SS-16 through SS-25 identified organic and inorganic constituents at concentrations that qualify as observed contamination (Tables 6 and 7). Since acetone is a common laboratory contaminant, a concentration greater than 10 times the SQL was used as the criterion to establish observed contamination. Samples SS-16 through SS-19, SS-21, and SS-25 meet this criterion for acetone. Sample SS-25, collected off the northeast bank of glade 4 (Figure 2) contained aroclor-1248, aroclor-1254, and aroclor-1260 at concentrations of 530, 540, and 260 μg/kg, respectively. Endosulfan I was detected in SS-16 through SS-21, in concentrations ranging from 6.4 to 230 μg/kg. Cadmium, which was detected in all samples except SS-23 and SS-25, qualified as observed contamination, with concentrations ranging from 10.7 to 38.0 mg/kg. All samples except SS-23 contained lead contamination at concentrations ranging from 112 to 219 mg/kg.

One surface water sample (SW-02) was collected, west of the central portion of glade 4, in North-Central Devil's Swamp. None of the organic or inorganic constituents identified in the sample were at a level qualifying as observed contamination (Tables 8 and 9).

4.2.3 Southern Devil's Swamp

Chemical analyses of sediment samples SS-05 through SS-11, SS-14, and SS-15 revealed organic and inorganic constituents at concentrations qualifying as observed contamination (Tables 10 and 11). Acetone was detected at elevated levels in samples SS-06, SS-08, SS-14, and SS-15. Samples SS-08 and SS-09 contained aroclor-1254, and samples SS-14 and SS-15 contained both aroclor-1248 and aroclor-1254. Phenanthrene was detected in sample SS-11.

Lead (98.5 mg/kg) was detected in a sediment sample (SS-15) collected in glade 1, located southwest of Devil's Swamp Lake.

No surface water samples were collected in Southern Devil's Swamp.

TABLE 5

INORGANIC CONTAMINANTS DETECTED IN SURFACE WATER OF NORTHERN DEVIL'S SWAMP

Location CLP Sample ID		Sample SW-02X MFZ737		Sample SW-03 MFZ738	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**
Aluminum	619	200	384	200	885
Calcium	15,400	5,000	17,700	5,000	16,400
Iron	1,490	100	855	100	1,870
Lead	3.6	2.0	ND	3.0	10.2
Magnesium	4,780	5,000	5,060	5,000	5,030
Manganese	97.3	15	981	15	1,590
Mercury	ND	0.2	25.0J	0.2	4.7J
Potassium	3,290	5,000	4,520J	5,000	4,110J
Sodium	33,900	5,000	38,300	5,000	38,500
Zinc	7.4	20	ND	20	ND

Notes:

All concentrations are expressed in terms of micrograms/litre (μg/L).

CLP = Contract Laboratory Program

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 1 of 6

Location CLP Sample ID		Sample SS-16 FY416		Sample SS-17 FY417		Sample SS-18 FY418		Sample SS-19 FY419		Sample SS-20 FY420	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	26	900J	24	360J	26	490J	21	240J	23	150J
Acenaphthene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Acenaphthylene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Anthracene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Aroclor-1248	ND	84	ND	80	ND	420	ND	68	ND	75	ND
Aroclor-1254	ND	84	ND	80	ND	420	ND	68	ND	75	ND
Aroclor-1260	ND	84	ND	80	ND	420	ND	68	ND	75	ND
Benzene	ND	26	ND	24	ND	26	ND	21	ND	23	ND
Benzo(a)anthracene	ND	840	ND	790	ND	850	ND	680	ND	740	50J
Benzo(b)fluoranthene	ND	840	ND	790	ND	850	57J	680	ND	740	38J
Benzo(k)fluoranthene	ND	840	ND	790	ND	850	ND	680	ND	740	40J
Benzo(g,h,i)perylene	ND	840	ND	790	ND	850	ND	680	ND	740	73J
Benzo(a)pyrene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
beta-BHC	ND	4.3	ND	4.1	ND	22	ND	3.5	ND	3.9	ND
Carbazole	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Carbon Disulfide	ND	26	ND	24	ND	26	ND	21	ND	23	ND
gamma-Chlordane	ND	4.3	ND	4.1	ND	22	3.2J	3.5	ND	3.9	ND
Chlorobenzene	ND	26	ND	24	ND	26	ND	21	ND	23	ND
Chrysene	ND	840	ND	790	ND	850	ND	680	ND	740	70J
4,4'-DDD	ND	8.4	ND	8.0	ND	42	14J	6.8	1.1J	7.5	2.4J

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 2 of 6

Location CLP Sample ID		Sample SS-16 FY416		Sample SS-17 FY417		Sample SS-18 FY418		Sample SS-19 FY419		Sample SS-20 FY420	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
4,4'-DDE	ND	8.4	2.3J	8.0	3.0J	42	ND	6.8	ND	7.5	ND
1,2-Dichlorobenzene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
1,3-Dichlorobenzene	ND	840	ND	790	ND	850	210J	680	140J	740	370J
1,4-Dichlorobenzene	ND	840	ND	790	ND	850	140J	680	87J	740	220J
Endrin	ND	8.4	ND	8.0	ND	42	ND	6.8	ND	7.5	ND
Endrin Ketone	ND	8.4	ND	8.0	ND	42	ND	6.8	ND	7.5	ND
Endosulfan I	ND	4.3	11J	4.1	6.4J	22	230	3.5	14J	3.9	23J
Ethylbenzene	ND	26	ND	24	ND	26	ND	21	ND	23	ND
Fluoranthene	36	840	ND	790	ND	850	ND	680	ND	740	42J
Fluorene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Heptachlor Epoxide	ND	4.3	ND	4.1	ND	22	8.3J	3.5	0.49J	3.9	1.0J
Hexachlorobenzene	ND	840	ND	790	ND	850	440J	680	300J	740	ND
Hexachlorobutadiene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Hexachloroethane	ND	840	ND	790	ND	850	ND	680	ND	740	ND
2-Methylnaphthalene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Naphthalene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
N-nitrosodiphenylamine	ND	840	ND	790	ND	850	ND	680	ND	740	ND
Phenanthrene	85	840	ND	790	ND	850	71J	680	50J	740	41J
Pyrene	33	840	ND	790	53J	850	62J	680	36J	740	70J
1,1,2,2-Tetrachloroethane	ND	26	ND	24	ND	26	ND	21	ND	23	ND

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 3 of 6

Location CLP Sample ID		Sample SS-16 FY416		Sample SS-17 FY417		Sample SS-18 FY418		Sample SS-19 FY419		Sample SS-20 FY420	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Tetrachloroethene	ND	26	ND	24	ND	26	ND	21	ND	23	ND
1,2,4-Trichlorobenzene	ND	840	ND	790	ND	850	ND	680	ND	740	ND
1,1,1-Trichloroethane	ND	26	ND	24	ND	26	ND	21	ND	23	ND
1,1,2-Trichloroethane	ND	26	ND	24	ND	26	ND	21	ND	23	ND
Trichloroethene	ND	26	ND	24	ND	26	ND	21	ND	23	ND
Toluene	ND	26	ND	24	ND	26	3J	21	ND	23	ND
Xylenes (total)	ND	26	ND	24	ND	26	ND	21	ND	23	ND

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 4 of 6

Location CLP Sample ID		Sample SS-21 FY421		Sample SS-22 FY422		Sample SS-23 FY423		Sample SS-24 FY424		Sample SS-25 FY425	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	22	430J	25	230J	18	ND	27	160J	29	290
Acenaphthene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Acenaphthylene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Anthracene	ND	730	ND	820	ND	580	ND	890	ND	940	60J
Aroclor-1248	ND	73	ND	82	ND	58	ND	89	ND	94	530
Aroclor-1254	ND	73	ND	82	ND	58	ND	89	ND	94	540J
Aroclor-1260	ND	73	ND	82	ND	58	ND	89	ND	94	260
Benzene	ND	22	ND	25	ND	18	ND	27	ND	29	ND
Benzo(a)anthracene	ND	730	ND	820	ND	580	ND	890	ND	940	80J
Benzo(b)fluoranthene	ND	730	ND	820	ND	580	ND	890	ND	940	62J
Benzo(k)fluoranthene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Benzo(g,h,i)perylene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Benzo(a)pyrene	ND	730	ND	820	ND	580	ND	890	ND	940	57J
beta-BHC	ND	3.8	ND	4.2	ND	3.0	ND	4.6	ND	4.9	ND
Carbazole	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Carbon Disulfide	ND	22	ND	25	ND	18	ND	27	ND	29	3J
gamma-Chlordane	ND	3.8	ND	4.2	ND	3.0	ND	4.6	ND	4.9	ND
Chlorobenzene	ND	22	ND	25	ND	18	ND	27	ND	29	ND
Chrysene	ND	730	49J	820	ND	580	ND	890	48J	940	190J
4,4'-DDD	ND	7.3	ND	8.2	ND	5.8	ND	8.9	ND	9.4	ND

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 5 of 6

Location CLP Sample ID		Sample SS-21 FY421		Sample SS-22 FY422		Sample SS-23 FY423		Sample SS-24 FY424		Sample SS-25 FY425	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**
4,4'-DDE	ND	7.3	ND	8.2	ND	5.8	ND	8.9	ND	9.4	ND
1,2-Dichlorobenzene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
1,3-Dichlorobenzene	ND	730	160J	820	ND	580	ND	890	ND	940	67J
1,4-Dichlorobenzene	ND	730	90J	820	ND	580	ND	890	ND	940	ND
Endrin	ND	7.3	ND	8.2	ND	5.8	ND	8.9	ND	9.4	ND
Endrin Ketone	ND	7.3	ND	8.2	ND	5.8	ND	8.9	ND	9.4	ND
Endosulfan I	ND	3.8	6.9J	4.2	ND	3.0	ND	4.6	ND	4.9	ND
Ethylbenzene	ND	22	ND	25	ND	18	2J	27	ND	29	ND
Fluoranthene	36	730	ND	820	ND	580	ND	890	83J	940	200J
Fluorene	ND	730	ND	820	ND	580	ND	890	54J	940	51J
Heptachlor Epoxide	ND	3.8	ND	4.2	ND	3.0	ND	4.6	ND	4.9	ND
Hexachlorobenzene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Hexachlorobutadiene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Hexachloroethane	ND	730	ND	820	ND	580	ND	890	ND	940	ND
2-Methylnaphthalene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Naphthalene	ND	730	ND	820	ND	580	50J	890	130J	940	57J
N-nitrosodiphenylamine	ND	730	ND	820	ND	580	ND	890	ND	940	ND
Phenanthrene	85	730	ND	820	51J	580	ND	890	150J	940	180J
Pyrene	33	730	38J	820	ND	580	ND	890	84J	940	490J
1,1,2,2-Tetrachloroethane	ND	22	ND	25	ND	18	ND	27	ND	29	ND

TABLE 6

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 6 of 6

Location CLP Sample ID		Sample SS-21 FY421		Sample SS-22 FY422		Sample SS-23 FY423		Sample SS-24 FY424		Sample SS-25 FY425	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Tetrachloroethene	ND	22	ND	25	ND	18	ND	27	ND	29	ND
1,2,4-Trichlorobenzene	ND	730	ND	820	ND	580	ND	890	ND	940	ND
1,1,1-Trichloroethane	ND	22	ND	25	3J	18	ND	27	ND	29	ND
1,1,2-Trichloroethane	ND	22	ND	25	ND	18	ND	27	ND	29	ND
Trichloroethene	ND	22	ND	25	ND	18	ND	27	ND	29	ND
Toluene	ND	22	ND	25	ND	18	7J	27	ND	29	ND
Xylenes (total)	ND	22	ND	25	ND	18	8J	27	ND	29	ND

Notes:

All concentrations are expressed in terms of micrograms/kilogram (μg/kg).

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

J = Estimated concentration

CLP = Contract Laboratory Program

SQL = Sample quantitation limit

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE 7

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 1 of 2

Location / CLP Sample ID		Sample SS-16 MFZ716		Sample SS-17 MFZ717		Sample SS-18 MFZ718		Sample SS-19 MFZ719		Sample SS-20 MFZ720		Sample SS-21 MFZ721	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Arsenic	17.7	5.1	49.4	5.0	42.3	4.7	16	4.1	13.9	4.4	24.8	4.3	22.6
Cadmium	3.1	2.5	38.0	2.5	31.7	2.4	15.7	2.1	12.8	2.2	36.1	2.2	23.3
Chromium	30.4	5.1	48.8	5.0	37.9	4.7	32.9J	4.1	22.1J	4.4	29.6	4.3	36.6
Lead	28.7	1.5	172	1.5	207	1.4	112	1.2	122	1.3	195	1.3	219
Mercury	ND	0.25	ND	0.25	ND	0.23	ND	0.21	ND	0.22	ND	0.22	ND
Zinc	113	10.1	285	10.1	290	9.4	157	8.2	131	8.8	164	8.7	154

TABLE 7

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF NORTH-CENTRAL DEVIL'S SWAMP

Sheet 2 of 2

Location CLP Sample ID		Sample SS-22 MFZ722		Sample SS-23 MFZ723		Sample SS-24 MFZ724		Sample SS-25 MFZ725	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Arsenic	17.7	4.6	27.1	3.5	5.9	5.0	20.8	6.0	26.4
Cadmium	3.1	2.3	17.0	1.7	0.89J	2.5	10.7	3.0	7.7
Chromium	30.4	4.6	23.6	3.5	30.6	5.0	22.7	6.0	32.1
Lead	28.7	1.4	172	1.0	14.0	1.5	182	1.8	137
Mercury	ND	0.16	ND	0.15	ND	0.19	ND	0.26	ND
Zinc	113	9.2	173J	6.9	108J	10.0	148J	11.9	167J

Notes:

All concentrations are expressed in terms of milligrams/kilogram (mg/kg).

CLP = Contract Laboratory Program

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

= Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE 8

ORGANIC CONTAMINANTS DETECTED IN SURFACE WATER OF NORTH-CENTRAL DEVIL'S SWAMP

Location CLP Sample ID		Sample SW-02 FY305	
Contaminant	**Background**	**SQL**	**Conc.**
Chloroform	ND	10	ND
1,3-Dichlorobenzene	ND	10	ND
1,4-Dichlorobenzene	ND	10	ND
1,2-Dichloroethene (total)	ND	10	ND
Hexachlorobutadiene	ND	10	ND
1,1,2,2-Tetrachloroethane	ND	10	ND
Tetrachloroethene	ND	10	ND
1,2,4-Trichlorobenzene	ND	10	ND
Trichloroethene	ND	10	ND

Notes:

All concentrations are expressed in terms of micrograms/kilogram (μg/kg).

CLP = Contract Laboratory Program

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

TABLE 9

INORGANIC CONTAMINANTS DETECTED IN SURFACE WATER OF NORTH-CENTRAL DEVIL'S SWAMP

Location CLP Sample ID		Sample SW-02 MFZ605	
Contaminant	**Background [a]**	**SQL**	**Conc.**
Lead	3.6	3	ND
Mercury	ND	0.20	ND
Zinc	7.4	20	ND

Notes:

All concentrations are expressed in terms of micrograms/litre (μg/L).

CLP = Contract Laboratory Program

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

[a] Sample SW-02 was selected as the background sample, because no Target Compound List organic substances were detected. The presence of laboratory blank contamination by lead, magnesium, potassium, and zinc does not affect the selection of SW-02 as representative of background conditions.

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 1 of 6

Location CLP Sample ID		Sample SS-05 FY407		Sample SS-06 FY406		Sample SS-07 FY500		Sample SS-08 FY408		Sample SS-09 FY409	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	22	160	17	330	15	88	23	370	19	140
Acenaphthene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Acenaphthylene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Anthracene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Aroclor-1248	ND	73	ND	55	ND	50	ND	74	ND	62	ND
Aroclor-1254	ND	73	16J	55	18J	50	46J	74	76J	62	81J
Aroclor-1260	ND	73	ND	55	ND	50	ND	74	ND	62	ND
Benzene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Benzo(a)anthracene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Benzo(b)fluoranthene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Benzo(k)fluoranthene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Benzo(g,h,i)perylene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Benzo(a)pyrene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
beta-BHC	ND	3.7	ND	2.8	ND	2.6	ND	3.8	ND	3.2	ND
Carbazole	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Carbon Disulfide	ND	22	ND	17	ND	15	ND	23	ND	19	ND
gamma-Chlordane	ND	3.7	ND	2.8	ND	2.6	ND	3.8	ND	3.2	ND
Chlorobenzene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Chrysene	ND	730	ND	550	ND	500	ND	750	ND	620	ND

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 2 of 6

Location CLP Sample ID		Sample SS-05 FY407		Sample SS-06 FY406		Sample SS-07 FY500		Sample SS-08 FY408		Sample SS-09 FY409	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
4,4'-DDD	ND	7.3	ND	5.5	ND	5.0	ND	7.4	ND	6.2	ND
4,4'-DDE	ND	7.3	ND	5.5	ND	5.0	ND	7.4	ND	6.2	ND
1,2-Dichlorobenzene	ND	730	ND	550	190J	500	ND	750	170J	620	ND
1,3-Dichlorobenzene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
1,4-Dichlorobenzene	ND	730	ND	550	59J	500	ND	750	76J	620	ND
Endrin	ND	7.3	ND	5.5	ND	5.0	ND	7.4	ND	6.2	ND
Endrin Ketone	ND	7.3	ND	5.5	ND	5.0	ND	7.4	ND	6.2	ND
Endosulfan I	ND	3.7	ND	2.8	ND	2.6	ND	3.8	ND	3.2	ND
Ethylbenzene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Fluoranthene	36	730	ND	550	29J	500	29J	750	61J	620	41J
Fluorene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Heptachlor Epoxide	ND	3.7	ND	2.8	ND	2.6	ND	3.8	ND	3.2	ND
Hexachlorobenzene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Hexachlorobutadiene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
Hexachloroethane	ND	730	ND	550	ND	500	ND	750	ND	620	ND
2-Methylnaphthalene	ND	730	ND	550	38J	500	ND	750	ND	620	ND
Naphthalene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
N-nitrosodiphenylamine	ND	730	ND	550	61J	500	ND	750	ND	620	ND
Phenanthrene	85	730	91J	550	180J	500	26J	750	91J	620	42J

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 3 of 6

Location CLP Sample ID		Sample SS-05 FY407		Sample SS-06 FY406		Sample SS-07 FY500		Sample SS-08 FY408		Sample SS-09 FY409	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Pyrene	33	730	ND	550	45J	500	49J	750	98J	620	65J
1,1,2,2-Tetrachloroethane	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Tetrachloroethene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
1,2,4-Trichlorobenzene	ND	730	ND	550	ND	500	ND	750	ND	620	ND
1,1,1-Trichloroethane	ND	22	ND	17	ND	15	ND	23	ND	19	ND
1,1,2-Trichloroethane	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Trichloroethene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Toluene	ND	22	ND	17	ND	15	ND	23	ND	19	ND
Xylenes (total)	ND	22	ND	17	ND	15	ND	23	ND	19	ND

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS
OF SOUTHERN DEVIL'S SWAMP

Sheet 4 of 6

Location CLP Sample ID		Sample SS-10 FY410		Sample SS-11 FY411		Sample SS-14 FY414		Sample SS-15 FY415	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	19	160	22	120J	26	310J	23	470
Acenaphthene	ND	630	ND	710	ND	840	ND	760	ND
Acenaphthylene	ND	630	ND	710	ND	840	ND	760	ND
Anthracene	ND	630	ND	710	140J	840	ND	760	ND
Aroclor-1248	ND	63	ND	71	ND	85	120J	76	94J
Aroclor-1254	ND	63	ND	71	ND	85	130J	76	89J
Aroclor-1260	ND	63	ND	71	ND	85	ND	76	ND
Benzene	ND	19	3J	22	ND	26	ND	23	ND
Benzo(a)anthracene	ND	630	ND	710	ND	840	67J	760	53J
Benzo(b)fluoranthene	ND	630	ND	710	ND	840	ND	760	ND
Benzo(k)fluoranthene	ND	630	ND	710	ND	840	ND	760	ND
Benzo(g,h,i)perylene	ND	630	ND	710	ND	840	ND	760	ND
Benzo(a)pyrene	ND	630	ND	710	ND	840	ND	760	ND
beta-BHC	ND	3.2	ND	3.6	ND	4.4	ND	3.9	ND
Carbazole	ND	630	ND	710	ND	840	ND	760	ND
Carbon Disulfide	ND	19	ND	22	ND	26	ND	23	ND
gamma-Chlordane	ND	3.2	ND	3.6	ND	4.4	ND	3.9	ND
Chlorobenzene	ND	19	ND	22	ND	26	ND	23	ND
Chrysene	ND	630	ND	710	ND	840	100J	760	100J

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 5 of 6

Location CLP Sample ID		Sample SS-10 FY410		Sample SS-11 FY411		Sample SS-14 FY414		Sample SS-15 FY415	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
4,4'-DDD	ND	6.3	ND	7.1	ND	8.5	ND	7.6	ND
4,4'-DDE	ND	6.3	ND	7.1	ND	8.5	ND	7.6	ND
1,2-Dichlorobenzene	ND	630	ND	710	ND	840	160J	760	ND
1,3-Dichlorobenzene	ND	630	ND	710	ND	840	ND	760	ND
1,4-Dichlorobenzene	ND	630	ND	710	ND	840	ND	760	ND
Endrin	ND	6.3	ND	7.1	1.3J	8.5	ND	7.6	ND
Endrin Ketone	ND	6.3	ND	7.1	0.71J	8.5	ND	7.6	ND
Endosulfan I	ND	3.2	ND	3.6	ND	4.4	ND	3.9	ND
Ethylbenzene	ND	19	ND	22	ND	26	ND	23	ND
Fluoranthene	ND	630	ND	710	99J	840	92J	760	73J
Fluorene	36	630	ND	710	ND	840	ND	760	ND
Heptachlor Epoxide	ND	3.2	ND	3.6	ND	4.4	ND	3.9	ND
Hexachlorobenzene	ND	630	ND	710	ND	840	ND	760	ND
Hexachlorobutadiene	ND	630	ND	710	ND	840	ND	760	ND
Hexachloroethane	ND	630	ND	710	ND	840	ND	760	ND
2-Methylnaphthalene	ND	630	ND	710	ND	840	ND	760	ND
Naphthalene	ND	630	ND	710	ND	840	ND	760	ND
N-nitrosodiphenylamine	ND	630	ND	710	ND	840	ND	760	ND
Phenanthrene	85	630	52J	710	960	840	190J	760	41J

TABLE 10

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 6 of 6

Location CLP Sample ID		Sample SS-10 FY410		Sample SS-11 FY411		Sample SS-14 FY414		Sample SS-15 FY415	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Pyrene	33	630	ND	710	120J	840	140J	760	170J
1,1,2,2-Tetrachloroethane	ND	19	ND	22	ND	26	ND	23	ND
Tetrachloroethene	ND	19	ND	22	ND	26	ND	23	ND
1,2,4-Trichlorobenzene	ND	630	ND	710	ND	840	ND	760	ND
1,1,1-Trichloroethane	ND	19	ND	22	ND	26	ND	23	ND
1,1,2-Trichloroethane	ND	19	ND	22	ND	26	ND	23	ND
Trichloroethene	ND	19	ND	22	ND	26	ND	23	ND
Toluene	ND	19	8J	22	ND	26	ND	23	ND
Xylenes (total)	ND	19	ND	22	ND	26	ND	23	ND

Notes:

All concentrations are expressed in terms of micrograms/kilogram (μg/kg).

CLP = Contract Laboratory Program

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE II

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 1 of 2

Location / CLP Sample ID		Sample SS-05 MFZ707		Sample SS-06 MFZ706		Sample SS-07 MFZ801		Sample SS-08 MFZ708		Sample SS-09 MFZ709	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**
Arsenic	17.7	5.2	36.1	3.1	22.8	4.8	26.3	4.2	28.1	7.1	17.7
Cadmium	3.1	2.6	6.5	1.6	4.1	2.4	5.1	2.1	5.9	1.8	3.9
Chromium	30.4	5.2	45.0	3.1	52.3	4.8	29.0	4.2	59.8	3.6	32.4
Lead	28.7	1.6	42.1J	0.93	18.2J	1.4	78.8J	1.3	75.6J	1.1	57.1J
Mercury	ND	0.26	ND	0.16	ND	0.24	ND	0.21	ND	0.18	ND
Zinc	113	10.4	157	6.2	115	9.6	151	8.4	171	7.1	123

TABLE 11

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN DEVIL'S SWAMP

Sheet 2 of 2

Location CLP Sample ID		Sample SS-10 MFZ710		Sample SS-11 MFZ711		Sample SS-14 MFZ714		Sample SS-15 MFZ715	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**
Arsenic	17.7	4.0	21.6	4.4	26.9	5.1	27.1	5.0	25.2
Cadmium	3.1	2.0	4.5	2.2	7.2	2.5	7.5	2.5	7.3
Chromium	30.4	4.0	43.4	4.4	50.8	5.1	79.6	5.0	36.5
Lead	28.7	1.2	30.3J	1.3	65.7J	1.5	84.3J	1.5	98.5J
Mercury	ND	0.20	ND	0.22	ND	0.25	ND	0.25	ND
Zinc	113	8.0	143	8.7	163	10.2	178	10.0	158

Notes:

All concentrations are expressed in terms of milligrams/kilogram (mg/kg).

CLP = Contract Laboratory Program

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = Sample quantitation limit

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

4.2.4 Southern Bayou Baton Rouge

Chemical analysis of sediment samples SS-01 through SS-04, SS-12, and SS-13 exhibited concentrations of organic and inorganic constituents that qualified as observed contamination (Tables 12 and 13). Acetone was detected at concentrations of 320 μg/kg in sample SS-12, and 250 ug/kg in sample SS-03. In samples SS-01 and SS-04, aroclor-1254 was detected at concentrations of 91 and 120 μg/kg, respectively.

Inorganic contaminants detected in sediments from sample location SS-01, which was collected in southern Bayou Baton Rouge, south of Devil's Swamp Lake, included cadmium and chromium.

No contaminants were detected in surface water sample SW-01, collected 150 feet north of the elbow in southern Bayou Baton Rouge.

5.0 ANALYTICAL CONCERNS

Forty-three samples were collected as part of this work assignment. The samples incorporate 12 sample delivery groups (SDG), as indicated below:

ORGANICS

SDG No.	Sample No.				
FY301	FY305	FY307			
FY341	FY437	FY438			
FY401	FY401	FY402	FY404	FY406	FY407
	FY408	FY409	FY410	FY411	FY412
	FY413	FY414	FY415	FY500	
FY403	FY403				
FY405	FY405				
FY416	FY416	FY417	FY418	FY419	FY420
	FY421				

TABLE 12

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS
OF SOUTHERN BAYOU BATON ROUGE

Sheet 1 of 3

Location CLP Sample ID		Sample SS-01 FY401		Sample SS-02 FY402		Sample SS-03 FY403		Sample SS-04 FY404		Sample SS-12 FY412		Sample SS-13 FY413	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Acetone	24	19	140J	20	160	20	250J	18	88	19	320	15	120
Acenaphthene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Acenaphthylene	ND	630	ND	650	ND	670	ND	590	85J	630	ND	500	ND
Anthracene	ND	630	65J	650	ND	670	ND	590	36J	630	ND	500	ND
Aroclor-1248	ND	63	52J	66	ND	67	ND	59	ND	63	ND	50	ND
Aroclor-1254	ND	63	91	66	ND	67	26J	59	120	63	ND	50	ND
Aroclor-1260	ND	63	ND	66	ND	67	ND	59	ND	63	ND	50	ND
Benzene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Benzo(a)anthracene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Benzo(b)fluoranthene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Benzo(k)fluoranthene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Benzo(g,h,i)perylene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Benzo(a)pyrene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
beta-BHC	ND	3.3	ND	3.4	ND	3.5	0.82J	3.0	ND	3.3	ND	2.6	ND
Carbazole	ND	630	75J	650	ND	670	ND	590	ND	630	ND	500	ND
Carbon Disulfide	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
gamma-Chlordane	ND	3.3	ND	3.4	ND	3.5	ND	3.0	ND	3.3	ND	2.6	ND
Chlorobenzene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Chrysene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND

TABLE 12

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN BAYOU BATON ROUGE

Sheet 2 of 3

Location CLP Sample ID		Sample SS-01 FY401		Sample SS-02 FY402		Sample SS-03 FY403		Sample SS-04 FY404		Sample SS-12 FY412		Sample SS-13 FY413	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
4,4'-DDD	ND	6.3	ND	6.6	ND	6.7	ND	5.9	ND	6.3	ND	5.0	ND
4,4'-DDE	ND	6.3	ND	6.6	ND	6.7	ND	5.9	ND	6.3	ND	5.0	ND
1,2-Dichlorobenzene	ND	630	380J	650	ND	670	43J	590	250J	630	ND	500	ND
1,3-Dichlorobenzene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
1,4-Dichlorobenzene	ND	630	110J	650	ND	670	ND	590	52J	630	ND	500	ND
Endrin	ND	6.3	ND	6.6	ND	6.7	ND	5.9	ND	6.3	ND	5.0	ND
Endrin Ketone	ND	6.3	ND	6.6	ND	6.7	ND	5.9	ND	6.3	ND	5.0	ND
Endosulfan I	ND	3.3	ND	3.4	ND	3.5	ND	3.0	ND	3.3	ND	2.6	ND
Ethylbenzene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Fluoranthene	ND	630	60J	650	ND	670	ND	590	40J	630	ND	500	36J
Fluorene	36	630	70J	650	ND	670	ND	590	ND	630	ND	500	ND
Heptachlor Epoxide	ND	3.3	ND	3.4	ND	3.5	ND	3.0	ND	3.3	ND	2.6	ND
Hexachlorobenzene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Hexachlorobutadiene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
Hexachloroethane	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
2-Methylnaphthalene	ND	630	110J	650	ND	670	ND	590	37J	630	ND	500	ND
Naphthalene	ND	630	56J	650	ND	670	ND	590	ND	630	ND	500	ND
N-nitrosodiphenylamine	ND	630	150J	650	ND	670	ND	590	63J	630	ND	500	ND
Phenanthrene	85	630	440J	650	ND	670	81J	590	200J	630	ND	500	ND

TABLE 12

ORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN BAYOU BATON ROUGE

Sheet 3 of 3

Location CLP Sample ID		Sample SS-01 FY401		Sample SS-02 FY402		Sample SS-03 FY403		Sample SS-04 FY404		Sample SS-12 FY412		Sample SS-13 FY413	
Contaminant	Background	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.	SQL	Conc.
Pyrene	33	630	110J	650	ND	670	42J	590	57J	630	ND	500	33J
1,1,2,2-Tetrachloroethane	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Tetrachloroethene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
1,2,4-Trichlorobenzene	ND	630	ND	650	ND	670	ND	590	ND	630	ND	500	ND
1,1,1-Trichloroethane	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
1,1,2-Trichloroethane	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Trichloroethene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Toluene	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND
Xylenes (total)	ND	19	ND	20	ND	20	ND	18	ND	19	ND	15	ND

Notes:

All concentrations are expressed in terms of micrograms/kilogram (μg/kg).
CLP = Contract Laboratory Program
J = Estimated concentration
ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected
SQL = Sample quantitation limit
▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

TABLE 13

INORGANIC CONTAMINANTS DETECTED IN SEDIMENTS OF SOUTHERN BAYOU BATON ROUGE

Location CLP Sample ID		Sample SS-01 MFZ701		Sample SS-02 MFZ702		Sample SS-03 MFZ703		Sample SS-04 MFZ704		Sample SS-12 MFZ712		Sample SS-13 MFZ713	
Contaminant	**Background**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**	**SQL**	**Conc.**
Arsenic	17.7	4.4	24.3	4.2	20.5J	4.2	21.1	3.7	19.5	4.0	17.7	3.1	12.9
Cadmium	3.1	2.2	14.0	2.1	3.9	2.1	3.0	1.8	5.6	2.0	3.1	1.6	1.5J
Chromium	30.4	4.4	94.8	4.2	44.3	4.2	48.2	3.7	53.4	4.0	30.4	3.1	16.5
Lead	28.7	1.3	23.9J	1.3	24.9J	1.2	30.5J	1.1	24.2J	1.2	28.5J	0.93	14.9J
Mercury	ND	0.22	ND	0.21	ND	0.21	ND	0.18	ND	0.20	ND	0.16	ND
Zinc	113	8.9	213	8.4	147	8.3	140	7.3	135	8.1	113	6.2	74.0

Notes:

All concentrations are expressed in terms of milligrams/kilogram (mg/kg).

CLP = Contract Laboratory Program

J = Estimated concentration

ND = Not detected or, because of blank contamination, the data are considered undetected and fully usable as undetected

SQL = *Sample quantitation limit*

▒ = Meet observed contamination criteria. Sample concentration is (1) greater than the SQL, and (2) greater than three times the background concentration.

SDG No.	Sample No.				
FY422	FY422	FY423	FY424	FY425	FY426
	FY427	FY428	FY429	FY430	FY431
	FY432	FY433	FY434	FY435	FY436
	FY443	FY444			

INORGANICS

SDG No.	Sample No.				
MFZ601	MFZ605	MFZ607			
MFZ641	MFZ737	MFZ738			
MFZ701	MFZ701	MFZ702	MFZ703	MFZ704	MFZ705
	MFZ706	MFZ707	MFZ708	MFZ709	MFZ710
	MFZ711	MFZ712	MFZ713	MFZ714	MFZ715
	MFZ801				
MFZ716	MFZ716	MFZ717	MFZ718	MFZ719	MFZ720
	MFZ721				
MFZ722	MFZ722	MFZ723	MFZ724	MFZ725	MFZ726
	MFZ727	MFZ728	MFZ729	MFZ730	MFZ731
	MFZ732	MFZ733	MFZ734	MFZ735	MFZ736
	MFZ743				

The samples were analyzed by the EPA CLP protocols OLM01.8 for organics and ILM02.1 for metals. Following the analysis, an EPA CLP contractor performed the data validation.

PRC has reviewed the data validation summaries from EPA and presents its findings in the following sections. Data summary tables are incorporated as Appendix B.

5.1 ORGANIC DATA VALIDATION SUMMARY

Holding Times

All samples were extracted and/or analyzed within contractual and technical holding time limits, except two volatile water samples. The aromatic results are estimated for volatile samples FY443 and

FY444, because the samples were analyzed 2 days beyond the technical holding time limits. Their usability would be limited, except that they are field blanks and contain no detectable amounts of aromatic volatile compounds. The results are fully usable for evaluating blank contamination.

The aromatic results are estimated for the volatile sample FY437, because the sample was analyzed beyond the technical holding time limits. The results are usable for limited purposes and biased low.

Instrument Tune and Performance

Tuning criteria were met for all analyses. Instrument performance was acceptable.

Calibrations

The percent difference (%D) and percent relative standard deviation (%RSD) were outside of the acceptable limits for acetone, methylene chloride, 2-butanone, and bis(2-ethylhexyl)phthalate. The following sample results are considered estimated:

- Acetone - FY401, FY403, FY411, FY414, FY416, FY417, FY418, FY419, FY420, FY421, FY422, FY424, FY428, FY430, and FY436
- Methylene chloride - FY401, FY403, FY411, FY414, FY417, FY419, FY420, and FY421
- 2-Butanone - FY401, FY403, FY411, FY414, FY416, FY418, FY419, FY420, FY421, FY422, FY424, and FY425
- bis(2-Ethylhexyl)phthalate - FY426, FY427, FY429, FY437, and FY438

Blanks

The positive results for methylene chloride in samples FY405, FY417, FY419, and FY421 are considered estimated because of the potential for laboratory contamination. Methylene chloride was detected in an associated laboratory blank.

The following sample results are considered undetected because of the presence of methylene chloride

and di-n-butylphthalate in laboratory blanks.

- Methylene chloride - FY423, FY424, FY425, FY426, FY427, FY428, FY429, FY431, FY432, FY433, FY434, FY435,
- Di-n-butylphthalate - FY435 and FY436

Surrogates

Surrogates (or system monitoring compounds) measure the efficiency of the preparation procedure and analytical technique. The following results are biased low because of the low recovery of surrogates in the samples.

- All pesticides and PCBs - FY406, FY407, FY408, FY409, FY410, FY411, FY412, FY413, FY414, FY415, FY500, FY419, FY420, FY421, and FY437
- Aroclor-1016, -1221, -1232, -1242, -1248, alpha-, beta-, and gamma-BHC, heptachlor, aldrin, and heptachlor epoxide in sample FY401

Matrix Spike/Matrix Spike Duplicate

The relative percent difference (RPD) and/or the percent recoveries exceeded the QC limits for the following samples. The results listed are considered estimated and biased high:

- 1,4-Dichlorobenzene - FY429
- 1,2,4-Trichlorobenzene - FY429

The MS/MSD recoveries also exceeded the QC limits for heptachlor, aldrin, endrin, and gamma-BHC, but the peaks also failed the retention time criteria. In the reviewer's opinion, the reported MS/MSD results were false positives for these four analytes. The nondetect results are, therefore, unusable for heptachlor, aldrin, endrin, and gamma-BHC for the sample FY429. False negatives are possible, and the actual detection limits may be much higher than reported. The associated samples (FY426, FY427, FY428, FY430, FY431, FY432, FY433, and FY434) are similar in matrix, and their results for these compounds are also to be considered unusable.

Internal Standards

The volatile internal standard chlorobenzene-d_5 was outside of the control limits for the following results. They are considered estimated.

- 2-Hexanone, 4-methyl-2-pentanone, tetrachloroethene, 1,1,2,2-tetrachloroethane, toluene, chlorobenzene, ethylbenzene, styrene, and xylenes - FY422 and FY433

Compound Identification/Quantitation

The following sample results are considered estimated, because the %D between the two analyses in different columns is greater than 25 percent.

- Aroclor-1248 - FY401, FY414, FY415
- Aroclor-1254 - FY401, FY407
- Endrin - FY411
- Endrin ketone - FY411
- Endosulfan I - FY416, FY417, and FY421

The identifications are tentative, and, because the analytes failed general identification criteria, results are estimated for (1) benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample FY425, and (2) benzo(a)anthracene in sample FY431.

Nine samples were diluted and analyzed for the pesticide and PCB analysis because of high levels of matrix interferences. In the reviewer's opinion, because of major interferences in the original analysis, only the diluted data should be used for samples FY431, FY432, FY433, and FY434. The reported quantitation limits are estimated for alpha-BHC in samples FY426, FY427, FY428, FY429, and FY430, because matrix interferences obscured this analyte detection. The diluted sample results should be used for alpha-BHC for samples FY426, FY427, and FY428. No qualifiers are required.

The aroclor-1254 result is estimated in sample FY425, because the quantitation peaks coeluted with

aroclor-1248 and aroclor-1260 peaks.

5.2 INORGANIC DATA VALIDATION SUMMARY

Holding Times

All holding time criteria were met.

Calibrations

All calibrations were acceptable.

Blanks

Because of the presence of analytes in calibration blanks, the following results are considered undetected:

- Arsenic - MFZ605 and MFZ607
- Beryllium - MFZ706 and MFZ713
- Barium - MFZ743
- Calcium - MFZ743
- Lead - MFZ605
- Magnesium - MFZ743
- Manganese - MFZ743
- Nickel - MFZ605 and MFZ607
- Potassium - MFZ724, MFZ726, MFZ727, MFZ728, MFZ729, MFZ730, MFZ731, MFZ732, MFZ733, MFZ734, MFZ735, and MFZ743
- Selenium - MFZ737 and MFZ738
- Sodium - MFZ743
- Vanadium - MFZ734, MFZ735, and MFZ743
- Zinc - MFZ743, MFZ605, MFZ607, MFZ737, and MFZ738

Interference Check

Interference check sample criteria were met for the inductively-coupled plasma (ICP) analyses.

Laboratory Control Samples

All laboratory control samples were acceptable.

Duplicates

All laboratory duplicate results met technical quality control criteria.

Matrix Spikes

The following sample results are considered estimated because of poor matrix spike recoveries. In the following, the recovery is low, and a low bias is expected in the sample results.

- Aluminum - MFZ605 and MFZ607
- Antimony - MFZ722, MFZ723, MFZ724, MFZ725, MFZ726, MFZ727, MFZ728, MFZ729, MFZ730, MFZ731, MFZ732, MFZ733, MFZ734, MFZ735, and MFZ736
- Iron - MFZ605 and MFZ607
- Lead and thallium - MFZ701, MFZ702, MFZ703, MFZ704, MFZ705, MFZ706, MFZ707, MFZ708, MFZ709, MFZ710, MFZ711, MFZ712, MFZ713, MFZ714, MFZ715, and MFZ801
- Selenium - MFZ716, MFZ717, MFZ718, MFZ719, MFZ720, MFZ721, MFZ737, and MFZ738

The sample result for lead in MFZ607 is considered estimated because of high matrix spike recoveries, and a high bias is expected.

The selenium results for soil samples MFZ722 through MFZ736 are considered unusable because of a

very low recovery. False negatives are possible, and matrix interference is suspected.

Graphite Furnace QC

The following sample results are considered estimated and biased low because they were quantitated by the method of standard additions, and the linearity of the curve was unacceptable.

- Arsenic - MFZ702 and MFZ719
- Lead - MFZ707 and MFZ712

The following sample results are considered estimated because the postdigestion analytical spike recoveries were low.

- Arsenic - MFZ736, MFZ607, and MFZ737
- Selenium - MFZ701, MFZ702, MFZ703, MFZ704, MFZ705, MFZ707, MFZ708, MFZ709, MFZ710, MFZ711, MFZ712, MFZ713, MFZ714, MFZ715, MFZ716, MFZ717, MFZ718, MFZ719, MFZ720, MFZ721, MFZ722, MFZ723, MFZ724, MFZ725, MFZ726, MFZ729, MFZ730, MFZ731, MFZ732, MFZ734, MFZ735, MFZ736, MFZ737, and MFZ738
- Thallium - MFZ701, MFZ702, MFZ703, MRZ704, MFZ705, MFZ706, MFZ707, MFZ708, MFZ709, MFZ710, MFZ711, MFZ712, MFZ713, MFZ714, MFZ715, MFZ801, MFZ723, MFZ728, MFZ731, MFZ732, MFZ733 and MFZ736

The sample results for lead in MFZ607 and MFZ738 are considered estimated because postdigestion analytical spike recoveries were high. Only positive results are qualified and are to be considered biased high.

Serial Dilutions

The calcium and zinc results for soil samples MFZ722 through MFZ736 are considered estimated because of serial dilution differences outside the control limits. Physical or chemical interferences are suspected.

The aluminum results for water samples MFZ605 and MFZ607 are considered estimated because of serial dilution differences outside the control limits. Physical or chemical interferences are suspected.

Field Duplicates

The traffic reports indicate that MFZ718 and MFZ719 are field duplicates. The aluminum and chromium percent differences for the field duplicates are not within the control limits. The aluminum and chromium results for samples MFZ718 and MFZ719 are considered estimated.

The traffic reports indicate that MFZ726 and MFZ727 are field duplicates. The zinc percent difference for the duplicates is not within the control limits; therefore, the zinc results for MFZ726 and MFZ727 are considered estimated.

The mercury results for associated water samples MFZ737 and MFZ738 are considered estimated.

Sample Verifications

All sample verification problems were corrected by the laboratory, and no further action is required.

5.3 DATA USABILITY

The data are qualified according to their usability, as follows:

U - The analyte was either undetected in the original analysis or, because of blank contamination, the data are considered undetected and fully usable as undetected.

J - The reported result is considered estimated, because of one or more applicable QC measures are out of control. The result is provisional and usable for limited purposes.

UJ - The analyte is undetected; however, the reported detection limit is considered estimated, because of one or more applicable QC measures are out of control. The result is undetected, but the level of detection is provisional and usable for limited purposes.

R - The analyte result (whether or not detected) is unusable, because a QC measurement is grossly outside of the established control limits. (The analyte may or may not be present in the sample.)

Organic

Of the compounds detected in the sample, the common ones fall into four categories: (1) aromatic hydrocarbons, (2) polynuclear aromatic hydrocarbons (PAH), (3) pesticides, and (4) PCBs. Table B-1 (Appendix B) includes only the compounds that have been detected in one or more samples. The target compounds not detected in any of the samples are too numerous to list in the table.

The data qualified with the "U" either are undetected in the original analysis or have been considered undetected because of blank contamination (as with methylene chloride and di-n-butylphthalate). The data are fully usable as undetected.

Because of poor calibrations, acetone, methylene chloride, 2-butanone, and bis(2-ethylhexyl)phthalate have been qualified "J" for a large portion of the samples. Either the %RSD or %D is outside of the acceptable limits for calibrations. These results are to be considered estimates of the true value and usable for limited purposes only.

Fifteen pesticide and PCB results qualified "J" are to be considered estimates because of the inability of the laboratory to successfully recover the system monitoring compounds (surrogates). In these cases, the recoveries are low with the possibility of false negatives or biased low results.

The pesticides heptachlor, aldrin, endrin, and gamma-BHC are qualified "R" unusable for nine samples because of very low spike recoveries and failure to meet retention time criteria. The potential for false negatives is high. Whether the original analysis was positive or undetected, the results qualified are completely unusable for any purposes.

One internal standard is outside of the acceptable control limits for two samples. Since the quantitation is obtained directly from the internal standards, the associated compounds are considered estimates and are usable for limited purposes.

Eight samples are qualified "J" or "UJ" for the pesticides endrin, endrin ketone, and endosulfan I, in addition to the PCBs aroclor-1248 and aroclor-1254, because of a high %D between the two column analyses. This imprecision causes the results to be estimates and usable for limited purposes.

On the basis of compound identification, four PAH results and one PCB result are considered estimated and qualified "J." These results are inaccurate and are usable only for limited purposes.

Inorganic

Except for thallium and antimony, all metals analyzed were detected in one or more samples. Table B-2 (Appendix B) includes all analytical results except thallium and antimony.

The data qualified with the "U" either are undetected in the original analysis or have been considered undetected because of blank contamination. The data are fully usable as undetected.

Most of the estimated "J" qualifiers are the result of low pre-digestion matrix spike recoveries, low graphite furnace analytical spike recoveries, and high %Ds in the serial dilution analyses. Low recoveries for both the matrix spike and the graphite furnace analytical spikes indicate the probable presence of a matrix interference.

The results associated with the low matrix spike and analytical spikes are biased low, even to the extent that false negatives are possible. These results should be used for limited purposes. The "J" qualifiers that resulted from high %Ds in the serial dilution indicates possible chemical or physical interference resulting from the sample matrix. These results are to be considered estimated.

Selenium has been qualified "R" as unusable in 15 samples. The matrix spike recovery was very low, and the potential for false negatives is high. Whether the original analysis was positive or undetected, the results qualified are completely unusable for any purposes.

6.0 PATHWAY ASSESSMENT

This section characterizes the environmental pathways and associated targets of potential contaminant

migration from the swamp.

6.1 GROUNDWATER PATHWAY

6.1.1 Groundwater Characteristics

Groundwater in the Baton Rouge area is found in (1) shallow Quaternary alluvial sands, (2) shallow Pleistocene aquifers known as the 400-, 600-, 800-, 1000-, 1200-, and 1500-foot sands, and (3) Tertiary-age aquifers known as the 1700-, 2000-, 2400- and 2800-foot sands (Ref. 12, p. 47).

6.1.2 Groundwater Receptors

The public drinking water supply for most of the Baton Rouge area comes from the deeper Pleistocene and Tertiary sand aquifers (Ref. 12, p. 47; Ref. 13; Ref. 14; Ref. 15; Ref. 16, pp. 1 to 5, 9, and 16). Public supply wells screened in the 1200-, 1500-, 2000-, and 2400-foot sands have been identified within 4 miles of the general site area (Ref. 13; Ref. 14; Ref. 15; Ref. 16, pp. 1 to 5, 9, and 16). The nearest public drinking water supply well is more than 1 mile from the site (Ref. 13). The Louisiana Department of Transportation and Development Water Well Registration System identifies the owner, geologic unit, location, use, and screening interval(s) of each registered water well in the state of Louisiana. No private drinking water wells were identified within 1/4 mile of the site (Ref. 16).

Groundwater contamination of the shallow alluvial sediments has been identified in the bayou area next to the Petro-Processors of Louisiana, Inc. site (Ref. 18, p. 2). However, the groundwater migration pathway was not sampled during the ESI, because (1) the available information indicates that only the shallow groundwater has been contaminated, (2) the nearest public drinking water supply well is more than 1 mile from the site, (3) potable aquifers are relatively deep, (4) no private drinking water wells are within 1\4 mile of the site, and (5) contamination, if any, detected in wells could not be attributed to the contamination specific to that in Devil's Swamp, since a heavy industrial area is located between the site and public drinking water wells of concern.

6.2 SURFACE WATER PATHWAY

6.2.1 Surface Water Characteristics

Bayou Baton Rouge enters the northern part of Devil's Swamp near the Petro-Processors of Louisiana, Inc. site with an annual average flow rate of 0.70 cfs (Ref. 24). The main bayou channel divides into numerous distributary channels. The distributary channels are interconnected and flow into a large area of freshwater marshes, sloughs, and ponds. Distinct channels reappear at the southern part of the swamp, and the swamp drains slowly into the Mississippi River. Devil's Swamp is subject to seasonal flooding from the mouth of Bayou Baton Rouge and from the south by the Mississippi River. Nearby residents use the Devil's Swamp area for hunting, fishing, and other recreation.

6.2.2 Surface Water Receptors

Hazardous substances in the sediments throughout the Devil's Swamp watershed may present a significant threat to the human food chain and environmental targets via the surface water migration pathway, because (1) the area is used for hunting and fishing, (2) the Devil's Swamp site is located in a wetlands area, and (3) several species on the federal list of threatened or endangered species have been identified in the area (Ref. 6, pp. 1, 2, 4, and 6; Ref. 7, p. 3; Ref. 8, p. 1; Ref. 19; Ref. 20; Ref. 21; Ref. 22). The threatened or endangered animal species that have been identified in the area include (1) Falco peregrinus anatum (the peregrine falcon), (2) Haliaeetus leucocephalus (the bald eagle), and (3) Scaphirhyncus albus (the pallid sturgeon) (Ref. 20; Ref. 21; Ref. 22). The peregrine falcon and bald eagle overwinter in the area, and the pallid sturgeon inhabits the Mississippi River near the mouth of Bayou Baton Rouge (Ref. 20; Ref. 21; Ref. 22). Mimulus ringens (the square-stemmed monkey flower), which is on the federal list of threatened or endangered plant species, is known to occur on the river sides of the Mississippi River levees near Baton Rouge (Ref. 21; Ref. 22). The surface water migration pathway was sampled during the ESI for the presence of hazardous substances.

Neither Devil's Swamp nor the Mississippi River is used as a drinking water supply in the area. No surface water intakes are known in the Mississippi River within 15 miles downstream of Devil's

Swamp (Ref. 23).

6.3 GROUNDWATER RELEASE TO SURFACE WATER PATHWAY

No samples were collected from Devil's Swamp to document that migration is occurring via this pathway.

6.4 SOIL EXPOSURE PATHWAY

The soil exposure pathway was not sampled during this ESI, because (1) there is no resident population on site, (2) there is a relatively low nearby population within 1 mile of the site, and (3) the site is relatively inaccessible to the general public (Ref. 5; Ref. 6, pp. 4 and 6).

6.4.1 Resident Population Threat

No humans are known to inhabit the site (Ref. 5)

6.4.2 Nearby Population Threat

No residences are located within 1/2 mile of the site, and about 32 people live within a 1/2- to 1-mile radius of the site (Ref. 5).

6.5 AIR MIGRATION PATHWAY

The air migration pathway was not sampled during the ESI, because (1) hazardous substances present in sediments in the Devil's Swamp area are covered by surface water, thereby minimizing the potential for an air release from the sediments, and (2) there are relatively no human receptors of an exposure to hazardous substances via the air migration pathway (Ref. 6, p. 6).

6.5.1 Air Characteristics

Winds are predominantly from the south (Ref. 10, p. 77).

6.5.2 Air Receptors

No residences are located on site or within 1/2 mile of the site. About 32 people live within a 1/2- to 1-mile radius of the site; 877 people live within a 1- to 2-mile radius; 3,222 people live within a 2- to 3-mile radius; and 16,117 people live within a 3- to 4-mile radius. The total population within a 4-mile radius of Devil's Swamp is 20,248 (Ref. 5).

7.0 SUMMARY

Devil's Swamp is a wetlands area located in East Baton Rouge Parish, Louisiana. Runoff from industries located in the area has contributed to historical and current contaminant releases in the swamp. Sampling results have revealed the presence of chlorinated hydrocarbons, in addition to inorganic compounds, in the sediments, surface water, and aquatic biota of Devil's Swamp.

Devil's Swamp is bordered on the west and south by the Mississippi River, on the north by the Petro-Processors of Louisiana, Inc. NPL site, and on the east by Rollins. Bayou Baton Rouge enters the northern part of Devil's Swamp near the Petro-Processors of Louisiana, Inc. site. The main bayou channel divides into numerous distributary channels. The distributary channels are interconnected and flow into a large area of freshwater marshes, sloughs, and ponds. Distinct channels reappear at the southern part of the swamp, and the swamp drains slowly into the Mississippi River. Devil's Swamp is subject to seasonal flooding from the north of Bayou Baton Rouge and from the south by the Mississippi River.

In 1985 and 1986, elevated concentrations of HCB and HCBD were detected in the soil, surface water, and sediments of Devil's Swamp. Also in 1986, an LDEQ investigation confirmed the presence of PCBs in the sediments of Devil's Swamp Lake, which is located in the east-central part of Devil's Swamp. In 1987, an LDEQ investigation confirmed the presence of HCB, HCBD, and PCBs in edible portions of fish tissue collected from Devil's Swamp Lake.

Nearby residents use the Devil's Swamp area for recreational fishing and hunting. In 1987, LDEQ and LDHH posted signs around parts of Devil's Swamp and Devil's Swamp Lake, advising the public against physical contact with surface water and against consuming fish caught in the lake. In 1993,

the advisory was expanded to include all areas of Devil's Swamp, Devil's Swamp Lake, and Bayou Baton Rouge south of Hall-Buck Marine Road.

An ESI sampling inspection conducted by EPA in October 1992 detected elevated concentrations of chlorinated organics and inorganic compounds in sediment and surface water samples collected from Devil's Swamp. The main pathway of concern is the surface water pathway. Chemical analyses detected concentrations of up to 12,000,000 μg/kg of HCBD; 120,000 μg/kg of HCB; and 310 mg/kg of lead in the sediment samples north of the NPC/Ewell property line. Concentrations of PCBs were highest in sediment samples collected west of the Rollins outfall and south of Devil's Swamp Lake. Surface water samples collected from Northern Devil's Swamp contained up to 25 μg/L of 1,2-dichloroethane; 74 μg/L of HCBD; and 25 μg/L of mercury.

DEVIL'S SWAMP ESI
REFERENCE LOG

SITE:	Devil's Swamp
IDENTIFICATION NUMBER:	LAD981155872
LOCATION:	East Baton Rouge Parish, Louisiana

REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
1	U.S. Geological Survey (USGS). 1963. 7.5-Minute Series Topographic Map of Louisiana. Scotlandville Quadrangle, Louisiana. Photorevised 1970 and 1980.
2	Ecology and Environment (E & E). 1985. Memorandum from K.H. Malone to Keith Bradley, Regional Project Officer of U.S. Environmental Protection Agency (EPA) Region 6. September 1985.
3	Louisiana Department of Environmental Quality (LDEQ) Water Pollution Control Division (WPCD). 1987. Internal memorandum from Michael H. Schurtz to J. Dale Givens. June 19.
4	LDEQ WPCD. 1986. Internal memorandum from Michael H. Schurtz to Patricia L. Norton and J. Dale Givens. July 18.
5	U.S. EPA. 1980. Geographical Exposure Modeling System (GEMS) database, compiled from U.S. Census Bureau 1980 data.
6	U.S. Department of Health and Human Services. 1992. "Public Health Assessment for Petro-Processors of Louisiana, Inc." Initial Release. September 30.
7	U.S. EPA. 1991. "Update on Activities at the Petro Processors, Inc. Superfund Site." February.
8	U.S. EPA. 1993. Letter from Cynthia J. Kaleri, Remedial Project Manager, to Mary Snyder, U.S. Food and Drug Administration, Program Enforcement Branch, re: Commercial Fishing in the Area of Bayou Baton Rouge, Devil's Swamp, and Devil's Swamp Lake. May 3.
9	The Advocate, Baton Rouge, Louisiana. July 9, 1993.

10 U.S. Department of Agriculture (USDA) Soil Conservation Service. 1968. "Soil Survey, East Baton Rouge Parish, Louisiana." September.

11 MITRE Corporation. 1988. Letter from Andrew M. Platt, Group Leader, to Lucy Sibold, U.S. EPA, re: Hazard Ranking System Net Precipitation Values. May 26.

12 Louisiana Department of Conservation, Louisiana Geological Survey, and Louisiana Department of Public Works. 1961. "Groundwater Conditions in the Baton Rouge Area, 1954-1959—With Special Reference to Increased Pumpage." December.

13 Baton Rouge Water Company. 1988. Well Information. February 1.

14 ICF Technology, Inc. (ICF). 1992. "Bayou Baton Rouge Preliminary Assessment." Reference No. 22, personal communication from Jeffrey Patterson to Mr. Mitchell and Liz Henderson, Parish Water Company, re: Parish Water Company Wells. February 11.

15 ICF. 1992. "Bayou Baton Rouge Preliminary Assessment," Reference No. 23, personal communication, from Jeffrey Patterson to Leroy White, City of Baker Water Utilities, Assistant Superintendent, re: City of Baker Water Wells. February 11.

16 Louisiana Department of Transportation and Development. 1993. Water Well Registration Report, Prepared for PRC. May 3.

17 U.S. EPA. 1992. The Hazard Ranking System, Code of Federal Regulations, Title 40, Part 300, Appendix A. July 1.

18 NPC Services, Inc. (NPC). 1990. "Work Plan for a Supplemental Waste Investigation. Baton Rouge Bayou at the Brooklawn Site, Petro-Processors, Inc." November 12.

19 U.S. Department of the Interior, Fish and Wildlife Service. Date Unknown. National Wetland Inventory 15-Minute Wetlands Map, Zachary, Louisiana.

20 Louisiana Department of Wildlife and Fisheries (LDWF). Date Unknown. "Threatened and Endangered Animals of Louisiana."

21 LDWF. 1993. Letter from Gary D. Lestor, Louisiana National Heritage Program, Coordinator, to Cedric J. Cascio, PRC Environmental Management, Inc., Environmental Scientist, re: Rare, Threatened, or Endangered Species and Critical Habitat Assessment for EPA Superfund Sites. May 17.

22 LDWF. 1993. Species Listed by the U.S. Government as Threatened or Endangered in Louisiana.

23 ICF. 1989. "Bayou Baton Rouge Preliminary Assessment," Reference No. 10, personal communication, from Jeffrey Patterson, Field Investigation Team Chemist, to Cathy Le Blanc, Baton Rouge Water Company, re: City of Baton Rouge Water Supply. May 3.

24 LDEQ. 1993. Letter from Gary R. Aydell, WPCD, to Cedric Cascio, PRC Environmental Management, Inc., Environmental Scientist, re: Bayou Baton Rouge Average Annual Rate of Flow. April 27.

25 LDEQ. WPCD. 1987. Internal memorandum from Michael H. Scurtz to J. Dale Givens. June 19.

REFERENCE 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SCOTLANDVILLE QUADRANGLE
LOUISIANA
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 ZACHARY 15' QUADRANGLE

Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and Louisiana Geodetic Survey

Planimetry by photogrammetric methods from aerial photographs taken 1952. Topography by planetable surveys 1953–54. Revised 1963

Polyconic projection. 1927 North American datum
10,000-foot grid based on Louisiana coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 15, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

To place on the predicted North American Datum 1983 move the projection lines 17 meters south and 10 meters east as shown by dashed corner ticks

SCALE 1:24000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND STATE OF LOUISIANA, DEPARTMENT OF PUBLIC WORKS, BATON ROUGE, LOUISIANA 70804
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

Revisions shown in purple and woodland compiled from aerial photographs taken 1970, 1978, and 1979
Map edited 1980. This information not field checked

Purple tint indicates extension of urban area

ROAD CLASSIFICATION

Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — U. S. Route — State Route

SCOTLANDVILLE, LA.
SW/4 ZACHARY 15' QUADRANGLE
N3030—W9107.5/7.5

1963
PHOTOREVISED 1970 AND 1980
DMA 7745 II SW—SERIES V885

REFERENCE 2

ECOLOGY AND ENVIRONMENT, INC.
REGION VI
MEMORANDUM

TO: Keith Bradley, Region VI, RPO

FROM: For K.H. Malone, Jr., RPM

DATE: September 9, 1985

SUBJ: Sampling Inspection at Petro-Processors Off-site (Devil's Swamp), Scotlandville, LA (LA345)
TDD#R-6-8501-20

On February 20 - March 2, 1985 the FIT collected soil and water samples from twenty-three (23) locations at Petro-Processors off-site (Devil's Swamp) near Baton Rouge, LA. A total of thirty-five (35) soil samples (including four duplicates), thirteen (13) water samples (including five rinsate blanks), and two high-hazard water samples were collected by the FIT to determine the nature and extent of possible contaminant migration from the Petro-Processors Brooklawn facility into the area known as Devil's Swamp. Devil's Swamp is located just south of the Brooklawn disposal ponds and north of the Mississippi River. Sample locations, sampling procedures, and inspection rational were described in a previous FIT memo (see T. Smith to K. Bradley memo dated January 11, 1985) and were duplicated during the field investigation.

Sample location descriptions (see attached map and photos) and analytical review comments (see attached Organic and Inorganic Review Summaries) are listed below:

Sample Location Descriptions

Sample location 01 (see photo #6)-Soil, 0-2' and 2'-4' depths, 450 ft. SSW of site, along low area between divergent forks of Baton Rouge Bayou. A groundwater sample was also collected from this borehole.

Sample location 02 (no photo)-Soil, 0-18" depth, 450 ft. SE of site, along low area between divergent forks of Baton Rouge Bayou. No deeper soil sample was collected due to an OVA reading of 50 ppm. Additionally, no groundwater appeared in the borehole.

Sample location 03 (see photo #5)-Soil, 0-18" depth, 750 feet south of site, from swale just west of braided fork of Baton Rouge Bayou. A groundwater sample was also collected from the borehole and was analyzed as a high-hazard sample due to discoloration and above 1,000 ppm OVA reading. Likewise, no deeper soil sample was collected.

Sample location 04 (no photo)-Sediment, from channel of divergent fork of Baton Rouge Bayou, 750 ft. SSW of site.

Reviewed by 6AW-SC
date

Sample location 05 (see photo #11)-Soil, 0-2' and 2'-4' depths 1,000 ft. south of site, from swale just east of braided fork of Baton Rouge Bayou. No groundwater appeared in this borehole.

Sample location 06 (no photo)-Soil, 0-2' and 2'-4' depths, 1300 ft. SE of site, along low area between Baton Rouge Bayou and ridge. A groundwater sample was also collected from the borehole.

Sample location 07 (see photo #1)-Sediment, from channel of divergent fork of Baton Rouge Bayou, 1250 ft. SSE of site.

Sample location 08 (see photo #8)-Soil, 0-2' depth, 1700 feet SSE of site, from low area between divergent forks of Baton Rouge Bayou. No deeper soil was collected due to OVA reading of 50 ppm. A groundwater sample was collected from the borehole.

Sample location 09 (no photo)-Sediment, from channel of divergent fork of Baton Rouge Bayou, 2000 ft. SSE of site.

Sample location 10 (see photo #7)-Soil, 0-2' and 2'-4' depths, 2000 ft. south of site, from low area just west of braided fork of Baton Rouge Bayou. No groundwater appeared in the borehole.

Sample location 11 (see photo #2)-Sediment, from channel of divergent fork of Baton Rouge Bayou, 1700 ft. SSW of site.

Sample location 12 was planned but was not sampled due to flooding conditions which restricted access to that portion of the swamp.

Sample location 13 (no photo)-Soil, 0-2' and 2'-4' depths, 2300 ft. SSW of site, along swamp area at mouth of braided fork of Baton Rouge Bayou. A groundwater sample was also collected from the borehole.

Sample location 14 (no photo)-Sediment, from swamp area 2700 ft. SSW of site, at mouth of divergent fork of Baton Rouge Bayou.

Sample location 15 (no photo)-Sediment, from swamp area 2600 ft. SW of site, at mouth of braided fork of Baton Rouge Bayou.

Sample location 16 (no photo)-Soil, 0-2' depth, 2300 ft. SW of site, from stained soil area near beaver pond within cleared area. A groundwater sample was collected from the borehole. No deeper soil sample was taken due to OVA reading of 50 ppm.

Sample location 17 (no photo)-Sediment, from channel of divergent fork of Baton Rouge Bayou, 2200 ft. SW of site.

Sample location 18 (see photo #3)-Soil, 0-2' and 2'-4' depths, 2800 ft. SW of site, from swamp area between braided forks of Baton Rouge Bayou. A groundwater sample was also collected from the borehole.

Sample location 19 (see photo#4)-Sediment, from channel of braided fork of Baton Rouge Bayou, 3000 ft. SW of site.

Sample location 20 (no photo)-Sediment, from swamp area 3,000 ft. SSE of site, near mouth of divergent fork of Baton Rouge Bayou.

Sample location 21 (no photo)-Sediment, from swamp area 2500 ft. SE of site, near mouth of main channel of Baton Rouge Bayou.

Sample location 22 (no photo)-Soil, 0-2' depth, 10 ft. north of main channel within cleared area. A groundwater sample was also collected from this borehole and was analyzed as a high-hazard sample due to discoloration and above 1,000 ppm OVA readings. Likewise, no deeper soil sample was collected.

Sample location 23 (see photo #9)-Soil, 0-2' and 2'-4' depths, 450 ft. south of site, 100 ft. north of well P-19. A groundwater sample was also collected from this borehole.

Sample location 24 (see photo #10)-Soil, 0-2' and 2'-4' depths, 30 ft. south of main channel in cleared area. A groundwater sample was also collected from the borehole.

It should be explained that OVA readings were continuously taken during the Level "C" sampling process. When readings reached the 50 ppm level (the action level for Level "B" personnel protection), all augering activity stopped. Sample location access, time constraints, and difficult terrain prevented the use of Level "B" equipment during this preliminary inspection.

QA Summary

Inorganic Water: MF2204, MF2207, MF2211, MF2213, MF2215, MF2216, MF2218, MF2225, MF2226, MF2231, MF2234, MF2239, MF2240.

Antimony, arsenic and selenium spike recoveries were low; therefore, reported concentrations of these metals may also be low. Mercury duplicate RPD was above QC limits.

Inorganic Soil: MF2012, MF2092, MF2093, MF2094, MF2095, MF2097, MF2098, MF2099, MF2100, MF2201, MF2202, MF2203, MF2205, MF2206, MF2208, MF2209, MF2210, MF2212, MF2214, MF2217.

Spike recoveries for antimony, selenium, silver, and cyanide were low; therefore, reported concentrations may also be low. Mercury spike recovery was high; therefore, reported concentrations may also be high. Iron duplicate RPD was above QC limits.

Inorganic Soil: MF2219, MF2221, MF2222, MF2223, MF2224, MF2227, MF2228 MF2229, MF2230, MF2232, MF2233, MF2235, MF2236, MF2237 MF2238.

Spike recoveries for antimony, arsenic, manganese, selenium, silver, tin and cyanide were low; thus, reported concentrations may also be low. Mercury spike recovery was high; thus, reported concentrations may also be high. All duplicate RPD's were within limits.

All reported concentrations of lead above 32 ppm in soil samples are questionable due to the analysis method used. Results should be considered as estimates.

Inorganic High Hazard: MF5139, MF5149.

Data has been rejected because of low recovery (25%) of lead in the Laboratory Control Sample.

Organic High Hazard: F5139, F5149.

D-14 terphenyl recovery was high in sample F5139. 2-Chlorophenol matrix spike recovery was 0% in one spiked sample. 4-Nitrophenol matrix spike recovery was 0% in all three spiked samples. Since no acid compounds were detected in the samples, this poor recovery does not impact the results. It appears that matrix spike solution was added to sample F5139, VOA fraction, therefore 1,1-dichloroethene, trichloroethene, benzene, toluene, and chlorobenzene are not sample contaminants. The samples should probably have been analyzed under a lower concentration protocol since no significant levels of contamination were detected.

Organic Water Samples: FB173, FB176, FB180, FB182, FB184, FB185, FB187, FB194, FB196, FB200, FB203, FB209, FB210.

All surrogate recoveries, matrix spike recoveries and duplicate RPD's were within QC limits. The data is acceptable.

Organic soil samples: FB183, FB186, FB188, FB190, FB191, FB192, FB193, FB195, FB197, FB198, FB199, FB201, FB202, FB204, FB205, FB206, FB207.

Surrogate recovery for D5-nitrobenzene was 0% on FB191, FB191MS and FB191MSD Surrogate recovery for 2,4,6-tribromophenol was 0% on FB191MS and FB191MSD. All other surrogate recoveries were within QC limits. All VOA matrix spike recoveries and duplicate RPD's were within QC limits. 9 of 24 BNA matrix spike recoveries were low or 0%. The lab indicates that recovery problems are due to dilution of the sample. One duplicate RPD was outside of QC limits.The data is acceptable.

Organic Soil Samples: FB066, FB162, FB163, FB164, FB165, FB166, FB167, FB168, FB169, FB170, FB171, FB172, FB174, FB175, FB177, FB178, FB179, FB181.

All surrogate recoveries were within QC limits. 4-Nitrophenol recovery was 0% on both the low level MS and MSD. The detection limit was too high to detect at spike level. Medium level - 3 of 14 BN matrix spike recoveries were high but RPD's were within limits. 0% recovery of 4-nitrophenol. Seven of the remaining eight acids had high recoveries, however RPD's were acceptable. Data is acceptable.

Data Interpretation:

Water:

Hexachlorobutadiene and hexachlorobenzene are the only organics detected in the water samples that are significant. These compounds were detected in samples collected from stations 08, 23 and 24. Metals concentrations in samples from stations 06, 08, 13, 16, 18 and 23 are much higher than concentrations from stations 01 and 24. Drinking water standards for arsenic, barium, cadmium, chromium, iron, lead, manganese, and mercury were all exceeded in the six high

metals concentration samples. Despite the lower metals concentrations in stations 01 and 24, drinking water standards for cadmium, iron, lead, and manganese were also exceeded in both of these samples. The standard for barium was also exceeded in station 01.

Soils:

Results of the soils metals analysis indicate that the composition of the soil in the swamp is highly variable, both laterally and vertically as evidenced by the variance of the field duplicate samples and in samples collected from different depths at the same location. Ten metals (aluminum, arsenic, barium, cadmium, iron, lead, manganese, tin, vanadium, and zinc) all varied by an order of magnitude from their lowest to their highest concentration. It is likely that all of these metals are present in elevated concentrations in some of the samples, however, the lack of background samples severely limits the data interpretation. Sample Stations 05, 06, 08, 09, 13, 16, 17, 18, 19, 20 and 21 all show four or more of these metals at what appears to be elevated concentrations. It was noted that when samples were collected from two different depths at a given location, the concentration of lead was always higher in the shallower (0-2') sample.

Hazardous substance list (HSL) organics detected in the soil samples, including high hazard samples, are tabulated below along with the sample stations where they were detected. Phthalates and other common laboratory contaminants are not included in the table.

	HSL Organics Detected
Compound	Sample Station (Concentration in ppb)
1,3-dichlorobenzene	06U(25J), 06UD(375), 13U(250), 21(260J), 22(1100J)
1,4-dichlorobenzene	07(620J), 13U(110J), 22(1200J)
hexachlorobutadiene	02(460), 02D(1300J), 03U(300,000), 05U(140J), 07(4400), 08(8900), 09(130,000), 13U(170J), 20(14,000), 21(350J), 23U(91J), 23UD(905), 24U(1700J), 24L(45J)
hexachlorobenzene	02(5600), 02D(12,000), 05U(250), 06U(110J), 06UD(200), 07(11,000), 08(35,000), 09(49,000), 10U(180J), 10D(40J), 11(200J), 20(32,000), 21(790), 22(54,000), 23U(220), 23UD(320), 24U(27,000), 24D(1200)
1,2-trans-dichloroethene	03U(2300)
trichloroethene	03U(1300), 03D(23,000)
phenanthrene	07(460J), 17(350J)
N-nitrosodiphenylamine	04D(420)
chlorobenzene	03D(23,000), 09(520J)
1,2,4-trichlorobenzene	13U(57J)
1,1-dichloroethene	03L(26,000)
benzene	03L(26,000)
toluene	03(23,000)

D - duplicate sample
J - estimated concentration
U - 0-2' sample
L - 2'-4' sample

Tentatively identified compounds detected in samples consisted of alkanes and alkenes, chlorinated compounds, non-HSL aromatics and unknowns. The reported total concentrations are all estimates and are tabulated below. The number in parenthesis following the total concentration is the number of compounds of the class reported.

Tentatively Identified Compounds
(concentration in ppb)

U = 0-2' sample, L = 2'-4' sample, D = duplicate sample, P = present

Station Number	Alkanes, Alkenes, and Alcohols	Chlorinated Compounds	Non-HSL Aromatics	Unknowns	Other
01U	11,880 (7)				
01L	10,530 (5)			6830 (5)	
02	7420 (7)		180 (1)	660(3)	
02D	5300 (3)				
03U		192,400 (9)		1600 (1)	
03L		49,000 (2)		4000 (2)	
04				740 (1)	
04D	586 (2)			1200 (1)	
05U					
05L					
06U	80 (1)		P (1)		
06UD	290 (2)		100 (1)	200 (1)	
06L	190 (2)				
07	7850 (6)	33 (1)	1990 (2)	13, 580 (10)	
08		7000 (2)	4000 (2)	4000 (1)	
09		216,400 (10)		2400(1)	
10U					
10L					
11					
13U	200 (2)		890 (4)	2380 (10)	
13L				790 (3)	
14	4050 (8)			7280 (8)	
15	6440 (5)			3180 (4)	
16	200 (1)				Sulfur, 1000
17	21,240 (13)			6750 (3)	
18U	12,770 (5)			22,070 (10)	
18L	11,090 (5)			7,550 (6)	
19	12,840 (5)			25,820 (9)	
20	9000 (2)	45 (1)	5000 (1)	64,333 (10)	
21	4250 (4)			15,620 (12)	Sulfur, 600
22U				300 (1)	
22L				2000 (1)	
23U				80 (1)	
23UD				80 (1)	
23L					
24U			4000 (1)	2000 (2)	
24L					

Broad unresolved chromatographic peaks were present in samples collected from station 07, 11, 13, 14, 17 and 21. This peak is characteristic of oily material. Stations 02, 15, 18 19 and 20 also contained this peak at a very low intensity.

Summary:

HSL organics were detected in all but five of the soil sample stations, however four of these stations (14, 15, 18 and 19) showed significant levels of contamination with alkanes and unknown organics. Three water samples, stations 08, 23 and 24 showed HSL organic contamination.

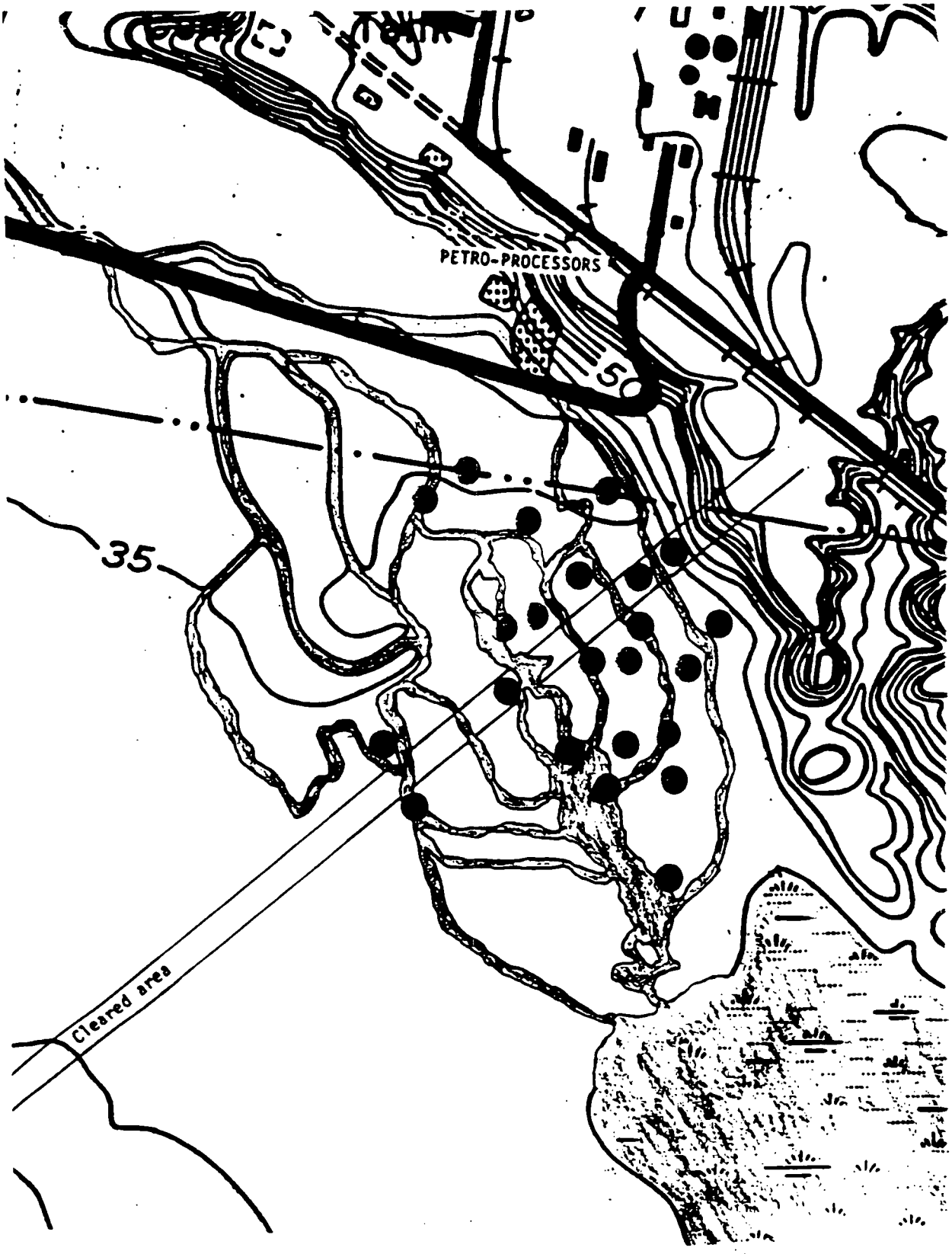
Eleven of the soil samples (05, 06, 08, 09, 13, 16, 17, 18, 19, 20 and 21) showed what appears to be metals contamination. Six other stations, 01 (2'-4'), 02, 07, 15, 23 (0-2'), and 24 (0-2') contained lower levels of metals that may also be elevated. Water samples from stations 06, 08, 13, 16, 18 and 23 all contained much higher levels of metals than samples from stations 01 and 24.

Due to the elevated levels of metals in many of the samples, it is difficult to determine if these are characteristically high for the region or are a result of contamination which may have emanated from the Brooklawn site. Additionally, the results indicate three possible types of contamination; namely 1) metals, 2) HSL organic compounds, and 3) tentatively identified compounds from a possible petroleum source. The elevated results from one given type of contamination don't correlate with elevated levels of the other types, which indicates the possibility of three (or more) separate events contributing to the contamination.

Considering the complex nature of the sample results, additional sampling should be performed at the area around and upstream from the site. However, specific sampling recommendations on this site are difficult to make due to the unusually restrictive terrain and the lack of appreciable access to most potential sampling locations. Further sampling would necessitate the drilling of deeper holes and the selection of different sampling locations to further define the zone of contamination. Additional sampling can be accomplished only after access has been greatly improved through the construction of stream-crossing points and primitive roads. Only then can level "B" (the required level of protection) sampling be attempted. Even then, sample collection will be difficult and will require "portable" decontamination stations or decontamination "sub-stations" to allow for tank changeover and preliminary personnel decontamination (some sample locations are 45-60 minutes from the closest suitable location to establish as a command post area). In addition, any future sampling inspection in Devil's Swamp should be attempted prior to February's floods. Ideally, a November - January time frame would suffice. A spring inspection is impossible due to the floods which hit the swamp in March, and a summer inspection would be dangerous due to the infestation of poisonous snakes, spiders, and alligators.

The Petro-Processors' site is currently under Remedial Investigation (RI). Portions of the RI encompass parts of Devil's Swamp. Although contamination has been identified in Devil's Swamp, conditions could change as a result of the RI and any subsequent remedial actions.

Because of the complexity of future sampling and the potential for change as a result of remedial work, it is recommended that further sampling of Devil's Swamp be postponed pending completion and results of the remedial actions.



Sampling Locations for
Petro-Processors Off-Site

Sampling locations shown as: ●

Scale: 1 inch = 800 feet

North

USGS Scotlandville, L
1970

CASE NUMBER 3874

SITE NAME/CODE: Petro Processors
LA 345

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF2204	MF2225	MF2226	MF2218	MF2215	MF2211	MF2234	MF2240	MF2207	MF2213	Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Soil	Soil
Aluminum	32,500	507,000	141,000	109,000	109,000	98,700	342,000	26,600	170		58,000	33,000
Antimony											.47	.52
Arsenic R	50	374	238	187		162	150	45			5.5	4.8
Barium	1560	11,600	6030	7720	4990	5580	8650	803	29		580	290
Beryllium	5	60	18	30	17	17	54				0.68	0.55
Cadmium	26	328	263	586	358	145	315	27			<1	<1
Chromium	40	582	226	156	151	147	444	36			41	33
Cobalt	46	476	242	639	179	234	597	64			7.1	5.9
Copper	77	782	352	343	232	219	654	43			21	13
Iron	48,600	622,000	225,000	319,000	353,000	431,000	622,000	58,700	718	72	21,000	14,000
Lead	515	5870	6280	5230	2780	991	6660	475	11	4.7	17	14
Manganese	5640	52,500	16,900	38,700	38,500	45,300	70,200	10,400	36		380	260
Mercury *	1.0	15.8	5.29	7.2	4.53	3.34	16.8	1.29	0.15	.39	0.046	0.081
Nickel	66	809	299	329	241	408	636	64			15	11
Selenium R										3.7	.23	.30
Silver									29		-	-
Thallium					7.2						9.1	7.7
Tin		69	40				41	29.2			.90	.96
Vanadium	94	792	358	603	357	330	1032	67			70	43
Zinc	389	4550	2270	4530	2530	1680	5090	370	33	38	55	40
Cyanide		9.8					25					
Calcium	27,900	296,000	109,000	169,000	227,000	271,000	390,000	60,800				
Magnesium	9,700	121,000	40,100	46,500	76,000	83,000	126,000	16,900				
Potassium	5100	25,300	8280	20,700	11,400	14,000	20,100	3090				
Sodium	7360	62,600	12,300	37,900	90,400	72,800	54,000	15,300				
Station No.	01	06	08	13	16	18	23	24				
Sample Station Location	450'SSW OF SITE BETWEEN DIVERGENT FORKS OF B.R BAYOU	1300'S.E. OF SITE, LOW AREA BETWEEN B.R. BAYOU & BRIDGE	1700'S.S.E. OF SITE BETWEEN DIVERGENT FORKS OF B.R. BAYOU	2300'S.S.W. OF SITE, SWAMP AREA AT MOUTH OF BRAIDED FORK B.R. BAYOU	2300'S.W. OF SITE STAINED SOIL FROM BEAVER POND WITHIN CLEARED AREA	2800'S.W. OF SITE, SWAMP AREA BETWEEN BRAIDED FORK OF B.R. BAYOU	100'N. OF WELL P-19 450'S. OF SITE	30'S. OF MAIN CHANNEL	2-21 FIELD RINSATE BLANK	2-22 FIELD RINSATE BLANK		

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R-spike sample recovery is not within control limits
*-duplicate analysis is not within control limits

1. Values obtained from "Element Concentrations in Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.
2. Reference for East/West Division is the 96°W longitudinal line which bisects Region VI

CASE NUMBER: 3874

SITE NAME/CODE: Petro Processors

LA 345

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF2216	MF2231	MF2239								Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Water	Water	Water								Soil	Soil
Aluminum	280										58,000	33,000
Antimony		58									.47	.52
Arsenic											5.5	4.8
Barium											580	290
Beryllium											0.68	0.55
Cadmium											<1	<1
Chromium											41	33
Cobalt											7.1	5.9
Copper	27	51	54								21	13
Iron	615	256									21,000	14,000
Lead	5.5		2.4								17	14
Manganese	31										380	260
Mercury	0.22	4.41	1.08								0.046	0.081
Nickel											15	11
Selenium											.23	.30
Silver											-	-
Thallium											9.1	7.7
Tin											.90	.96
Vanadium											70	43
Zinc	40	22	19								55	40
Cyanide												
Calcium												
Magnesium												
Potassium												
Sodium	884											
Station No.												
Sample Station Location	2-23 FIELD RINSATE BLANK	3-1 FIELD RINSATE BLANK	3-2 FIELD RINSATE BLANK									

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CASE NUMBER 3874

SITE NAME/CODE: Petro Processors
LA 345

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF2203	MF2202	MF2205	MF2206	MF2212	MF2097	MF2098	MF2235	MF2236	MF2221	Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Aluminum	7438 *	10,327 *	4971 *	9359 *	2768 *	1395 *	1696 *	6563 *	12,493	10,645	58,000	33,000
Antimony	R	R	R	R	R	R	R	R	R	R	.47	.52
Arsenic								4.0 R	R	6.5 R	5.5	4.8
Barium	123	125	133	251	46	32	39	136	186	166	580	290
Beryllium	0.4	0.6		0.4				0.5	0.8	0.8	0.68	0.55
Cadmium			2.1	4.3			2.9	5.1		4.4	<1	<1
Chromium	10	13	7	14	5			10	15	19	41	33
Cobalt	4	5		6	7			5	6	10	7.1	5.9
Copper					15			17	26	39	21	13
Iron	9271 *	13,593 *	6930 *	10026 *	3322 *	1682 *	2389 *	8658	14,060	12,543	21,000	14,000
Lead	72	27	92	128	39	36	53	127	92	268	17	14
Manganese	388	404	301	417	114	57	88	372 R	594 R	440 R	380	260
Mercury									0.8		0.046	0.081
Nickel											15	11
Selenium	R	R	R	R	R	R	R	R	R	R	.23	.30
Silver	R	R	R	R	R	R	R	R	R	R	-	-
Thallium		3			2						9.1	7.7
Tin								25 R	23 R	R	.90	.96
Vanadium	14.7	19.4	11.4	17.9	5.3	3.2	6.9	14.7	22.9	22.7	70	43
Zinc		8	2	8				19	27	53	55	40
Cyanide	R	R	R	R	R	R	1.5 R	R	R	R		
Calcium	1108	1517	1122	1423	414	334	493	1281	2312	1961		
Magnesium	919	1685	721	1108	356		200	947	1820	1432		
Potassium	582	939	353	504	646			712	974	864		
Sodium	558	575	553	567	649	474	562	676	713	785		
Station No.	01	01	02	02	03	04	04	05	05	06		
Sample Station Location	450'S.S.W. OF SITE BETWEEN DIVERGENT FORKS OF B.R. BAYOU 0-2'	0-4'	450'S.E. OF SITE, LOW AREA BETWEEN DIVERGENT FORKS OF B.R. BAYOU 0-18"	DUPLICATE	750'S. OF SITE, SWALE W. OF FORK OF B.R. BAYOU	750'S.S.W. OF SITE, DIVERGENT FORK B.R. BAYOU	DUPLICATE	1000'S. OF SITE 0-2'	2-4'	1300'S.E. OF SITE, LOW AREA BETWEEN B.R. BAYOU AND RIDGE 0-2'		

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CASE NUMBER: 3874

SITE NAME/CODE: Petro Processors
LA 345

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF 2223	MF2224	MF2012	MF2227	MF 2092	MF2228	MF2229	MF2095	MF2217	MF2219	Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Aluminum	10,464	11,951	10,143 *	10,423	9,259 *	6081	6003	3013 *	14,183*	12,983	58,000	33,000
Antimony	R	R	R	R	R	R	R	R	R	R	.47	.52
Arsenic	4.8 R	R		4.1 R	14.7	4.9 R	R		15.8	24.6 R	5.5	4.8
Barium	153	154	296	120	205	111	111	65	200	211	580	290
Beryllium	0.7	1	0.5	0.7	0.4	0.5	0.5		0.6	0.8	0.68	0.55
Cadmium	3.9		3.4	5.1	17.4			5.7	14.1	7.5	<1	<1
Chromium	15	16	12	14	12	9	18	5	17	16	41	33
Cobalt	11	10	5	12	13	6	5		17	20	7.1	5.9
Copper	20	19		16	16	9	9	11	30	19	21	13
Iron	13,586	18,641	10,488 *	13,718	10,716 *	8514	9116	3880 *	13,692*	15,381	21,000	14,000
Lead	195	25	79	185	236	86	46	68	319	93	17	14
Manganese	441 R	498 R	399	498 R	395	390 R	380 R	124	357	461 R	380	260
Mercury							0.2		0.3	R	0.046	0.081
Nickel											15	11
Selenium	R	R	R	R	R	R	R	R	R	R	.23	.30
Silver	R	R	R	R	R	R	R	R	R	R	-	-
Thallium									3		9.1	7.7
Tin	62 R	R		R		R	R		36	R	.90	.96
Vanadium	21	27.1	17.5	24.1	20.5	14.3	13.1	8	22.2	25.3	70	43
Zinc	45	24		40	56	15	7		143	143	55	40
Cyanide	R	R	R	R	R	R	R	R	R	R		
Calcium	1871	2115	1899	1701	1728	1333	1138	566	2343	2392		
Magnesium	1418	2241	1407	1435	1026	996	953	403	1667	2272		
Potassium	561	1263	423	842	487	545	468	714	660	1453		
Sodium	810	851	941	688	859	726	706	489	886	945		
Station No.	06	06	07	08	09	10	10	11	13	13		
Sample Station Location	0-2' DUPLICATE	2-4'	250'S.E. OF SITE, CHANNEL OF DIVERGENT FORK B.R. BAYOU	1700'S.S.E. OF SITE, DIVERGENT FORK B.R. BAYOU	2000'S.S.E. OF SITE, DIVERGENT FORK B.R. BAYOU	LOW AREA W. OF BRAIDED FORK B.R. BAYOU, 0-2'	2-4'	1700'S.S.W. OF SITE, DIVERGENT FORK B.R. BAYOU	2300'S.S.W. OF SITE DIVERGENT FORK B.R. BAYOU 0-2'	2-4'		

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R-spike sample recovery is not within control limits

*-duplicate analysis is not within control limits

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2. Reference for East/West Division is the 96°W longitudinal line which bisects Region VI.

CASE NUMBER: 3874

SITE NAME/CODE: Petro Processors
LA 345

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF2099	MF2100	MF2214	MF2201	MF2209	MF2210	MF2208	MF2093	MF2094	MF2222	Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Aluminum	8922 *	10,283*	11,516 *	19,198 *	12,110*	12,194*	15,026*	13,122*	16,225*	7521	58,000	33,000
Antimony	R	R	R	R	R	R	R	R	R	R	.47	.52
Arsenic	2.6	6.2	4.4	31.9	17.8	4.6	3.8	2.9	11.1	R	5.5	4.8
Barium	122	115	166	193	174	176	203	235	314	215	580	290
Beryllium	0.5	0.5	0.7	0.8	0.8	0.7	0.8	0.7	0.8	0.3	0.68	0.55
Cadmium	2.3	2.7		16	12.5		2.1	21.8	40.6	3.2	<1	<1
Chromium	14	12	14	24	15	16	18	14	28	10	41	33
Cobalt	5	4	8	10	14	12	8	12	12	10	7.1	5.9
Copper	7		16	10	22	19	18			9	21	13
Iron	8195 *	9217 *	12,336*	17,638 *	14,907*	19,363*	17,851*	14,100*	16,713*	9408	21,000	14,000
Lead	43	124	27	302	253	21	83	176	189	161	17	14
Manganese	282	275	389	349	641	645	406	397	443	299 R	380	260
Mercury		1.2					R				0.046	0.081
Nickel					18	20	19				15	11
Selenium	R	R	R	R	R	R	R	R	R	R	.23	.30
Silver	R	R	R	R	R	R	R	R	R	R	-	-
Thallium					4		4			2	9.1	7.7
Tin	34		44		176	68				R	.90	.96
Vanadium	17.3	18.2	20.9	28.7	24	25.1	23.8	22.6	29.3	14.5	70	43
Zinc	22	41	36	96	135	53	57	31	79	20	55	40
Cyanide	R	R	R	R	R	R	R	2 0 R	3 R	R		
Calcium	1457	1394	2510	1907	3415	4431	3337	2112	2394	1590		
Magnesium	1009	1038	1973	1821	2424	3983	3575	1508	1863	1142		
Potassium	972	713	1451	1668	989	1626	1753	662	1047	769		
Sodium	715	732	941	875	1014	1032	906	977	1162	764		
Station No.	14	15	16	17	18	18	19	20	21	22		
Sample Station Location	SWAMP AREA 2700'S.S.W. of SITE AT MOUTH OF DIVERGENT FORK OF B.R. BAYOU	2600'S.S.W. OF SITE AT MOUTH OF BRAIDED FORK OF B.R. BAYOU	2300'S.W. OF SITE, STAINED SOIL FROM BEAVER POND	2200'S.W. OF SITE FROM CHANNEL OF DIVERGENT FORK B.R. BAYOU	2800'S.W. OF SITE, SWAMP AREA BETWEEN BRAIDED FORK B.R. BAYOU 0-2'	2-4'	3000'S.W. OF SITE NEAR MOUTH DIVERGENT FORK B.R. BAYOU	3000'S.S.E. OF SITE NEAR MOUTH DIVERGENT FORK B.R. BAYOU	2500'S.E. OF SITE, NEAR MAIN CHANNEL OF B.R. BAYOU	10'N. OF MAIN CHANNEL IN CLEARING		

E-indicates a value estimated or not reported due to the presence of interference

R-spike sample recovery is not within control limits

*-duplicate analysis is not within control limits

1. Values obtained from "Element Concentrations in Soils and Other Surface Materials of the Conterminous United States", dated 1984. U.S.G.S. Professional Paper 1270.

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CASE NUMBER: 3874

SITE NAME/CODE: Petro Processors

LA 345

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers										Ambient Background 1.	
	MF2230	MF2232	MF2233	MF2237	MF2238	MF5139	MF5149				Western U.S. 2.	Eastern U.S. 2.
Matrix Type	Soil	Soil	Soil	Soil	Soil	High	High				Soil	Soil
Aluminum	4525	6739	4502	5651	8797						58,000	33,000
Antimony	R	R	R	R	R						.47	.52
Arsenic	2.9 R	3.5 R	R	R	R						5.5	4.8
Barium	115	149	60	122	.74						580	290
Beryllium	0.5	0.5	0.3	0.4	0.4						0.68	0.55
Cadmium				2.6							<1	<1
Chromium	8	11	6	8	11						41	33
Cobalt	5	5		7							7.1	5.9
Copper	11	10	5	13	10						21	13
Iron	6691	8966	5671	7981	7791						21,000	14,000
Lead	145	259	28	159	36						17	14
Manganese	252 R	296 R	236 R	346 R	242 R						380	260
Mercury		0.5									0.046	0.081
Nickel											15	11
Selenium	R	R	R	R	R						.23	.30
Silver	R	R	R	R	R						-	-
Thallium											9.1	7.7
Tin	28 R	33 R	24 R	21 R	25 R						.90	.96
Vanadium	12.4	14.6	10.6	13.8	14.1						70	43
Zinc	12	22	3	16	15						55	40
Cyanide	R	R	R	R	R							
Calcium	1222	1463	1065	1401	1263							
Magnesium	780	1031	712	881	987							
Potassium	689	655	386	490	680							
Sodium	680	647	683	553	539							
Station No.	23	23	23	24	24	03	22					
Sample Station Location	100' N. OF WELL P-19, 450' S. OF SITE 0-2'	DUPLICATE	2-4'	30' N. OF MAIN CHANNEL 0-2'	2-4'							

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*-duplicate analysis is not within control limits

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Site Name/Code Petro Processors LA345 Case Number [redacted] Concentration ppb Page 1 of 7

Sample Station Number and Location			01	06	08	13	16	18	23	24	2-21 FIELD RINSATE BLANK	2-22 FIELD RINSATE BLANK	2-23 FIELD RINSATE BLANK	3-1 FIELD RINSATE BLANK	3-2 FIELD RINSATE BLANK
Compound	Scan No.	Fraction /Class													
EPA SAMPLE NUMBER			FB173	FB194	FB196	FB187	FB184	FB180	FB203	FB210	FB176	FB182	FB185	FB200	FB209
MATRIX			Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
di-n-butyl phthalate		ABN/1	2 JB	2 JB	2 JB	1JB	4JB		2 JB	6 JB				4 JB	3 JB
di-n-octyl phthalate		ABN/1	2 J												
acetone		VOA/2							17		7J	9J	9J	48	75
methylene chloride		VOA/1											7B	23B	
hexachloro butadiene		ABN/1			62				20	7J					
diethyl phthalate		ABN/1			1J										
hexachloro benzene		ABN/1			9J				6J	3J					
bis-(2-ethyl hexyl) phthalate		ABN/1								2J					
5-methyl-2-hexane	352	ABN, -3	81	84		84	22	51			P	29	P		
trichloro ethene	205	ABN-3				63					61				
unknown	329	ABN-3			130				110	19				100	99
cyclohexanol isomer	364	ABN-3	P		16	P			17	12				25	18
cyclohexenone isomer	421	ABN-3			24	P	P		33	27				29	25
unknown	559	ABN-3			19				P	11				11	15
unknown	540	ABN-3			P				P	P				13	P

1. Priority Pollutant.
2. Specified Hazardous Substance.
3. Tentatively Identified.

VOA - Volatile
ABN - Acid Base/Neutral
Pest - Pesticide

B - The analyte is found in the lab blank.
J - Indicates an estimated value for tentatively identified compounds or for compounds found below detection limit.
P - Present in sample, but not reported by lab.

Table II: ORGANIC ANALYSIS SUMMARY

Site Name/Code Petro Processors LA 345 Case Number 3874 Concentration ppb

Sample Station Number and Location			01 950'SSW of Site Between Divergent Forks of B.A. Bayou 0-2'	01 950'SSW of Site Between Divergent Forks of B.A. Bayou 2-4'	02 950'S.E. of Site Low Area Between Divergent Forks of B.A. Bayou 0-18"	02 950'S.E. of Site Low Area Between Divergent Forks of B.A. Bayou DUP.	03 750'S. of Site from Swale just W. of Braided Fork of B.A. Bayou 0-18"	04 250'S.S.W. of Site Divergent Fork of B.A. Bayou	04 DUP	05 1000'S. of Site 0-2'	05 2-4'	06 1300'S.E. of Site along Low Area between B.A. Bayou & Fork 0-2'	06 DUP	06 2-4'	07 1250'S.E. Site Channel of Divergent Fork B.A. Bayou
Compound	Scan No.	Fraction /Class													
EPA SAMPLE NUMBER			FB172	FB171	FB174	FB175	FB181	FB167	FB166	FB204	FB205	FB190	FB192	FB193	FB066
MATRIX			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Methylene chloride		VOA-1	9.6B	6.1JB	6.8B	5.5JB	1600B	12B	6.5B	94B	110B	84B	120B	110B	18B
1,3-dichloro benzene		ABN-1										25J	37J		
1,4-dichloro benzene		ABN-1													620J
Hexachlorobutadiene		ABN-1			460	1300J	300,000			140J					4400
Bis (2-ethyl hexyl) phthalate		ABN-1										44J	71J	575	
Hexa chloro benzene		ABN-1			5600	12,000				25Q		110J	200		11,000
1,1,2-Trichloro ethane 222,184,202		ABN-3								100B		100B	200B	200B	
1,1,2,2-Trichloro ethane 429,442		ABN-3								400B	300B	400B	400B	400B	
Styrene	393	ABN-3			180							P	100		1000
Unknown	1607	ABN-3													
Unknown	1824	ABN-3													
Acetone		VOA-2	6.6JB	20B	18B		3800B		7.3JB						
Cyclo hexanone	408	ABN-3								200B	90B				
Methyl cyclohexane	151	ABN-3										80	90		
Unknown	1580	ABN-3											200		
Alkane	1928	ABN-3											200	90	
Alkane	1842	ABN-3												100	
1,2-trans dichloro ethene		VOA-1					2300								
Trichloro ethene		VOA-1					1300								
Phenanthrene		ABN													460J
N-Nitroso diphenyl amine		ABN							420						
Alkane	706	ABN-3													1000
Unknown	730	ABN-3													2200
Unknown	863	ABN-3													1300
Unknown	948	ABN-3													820
Unknown	992	ABN-3													580
Unknown	1000	ABN-3													1200
Unknown	1093	ABN-3													1300
Unknown	1166	ABN-3													380
Alkane	1185	ABN-3													760
Unknown	1213	ABN-3						740							1300
Alkane	1319	ABN-3													790
Alkene or alcolol	1328	ABN-3													2500
Alkene or alcolol	1355	ABN-3													1700
Unknown	1498	ABN-3													2800
Unknown	1332	ABN-3							1200						
Alkane	241	ABN-3							580						
Alkane	1055	ABN-3	2700												
Alkane	1120	ABN-3	1100												
Tetra chloro ethene	299	ABN-3		230											
Unknown	971	ABN-3			290										
Unknown	1189	ABN-3			200										
Alkane	1197	ABN-3			200										
Alkane	1235	ABN-3			200										
Unknown	1264	ABN-3			170										
Alkane	1336	ABN-3			340										

1. Priority Pollutant.
2. Specified Hazardous Substance.
3. Tentatively Identified.

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Table II: ORGANIC ANALYSIS SUMMARY

Site Name/Code Petro Processors LA345 Case Number 1874 Concentration ppb Page 1 of 7

Sample Station Number and Location			01	01	02	02	03	04	04	05	05	06	06	06	07
Compound	Scan No.	Fraction /Class	0-2'	2-9'	0-18"	DVP	0-18"		DVP	0-2'	2-9'	0-2'	DVP	2-9'	
EPA SAMPLE NUMBER			FB172	FB171	FB174	FB175	FB181	FB167	FB166	FB204	FB205	FB190	FB192	FB193	FB066
MATRIX			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Toluene	257	ABN-3	1400B	2200B	610	1200B									
Alcohol	262	ABN-3	400	430	280										
Alkene	276	ABN-3	1200	10000B	630										
Ketone	287	ABN-3	1100B	1400B	360										
Alkane	301	ABN-3	680	400											
Alkane	307	ABN-3	2300	8300	2600	2700									
Alkane	313	ABN-3	1200	1600	1400	1300									
Alkane	319	ABN-3	3500	4800	3400	1300									
Ketone	B 326	ABN-3	6400B	8800B	820 B	5500 B									
Xylene	350	ABN-3	210	260											
Unknown	445	ABN-3		420											
Unknown	550	ABN-3		860											
Unknown	983	ABN-3		1700											
Unknown	1113	ABN-3		1700											
Unknown	1135	ABN-3		2600											
Chloro alkene	272	VOA-3					3600								
Chloro Alkene	403	VOA-3					6800								
Unknown - chlorinated	514	VOA-3					6800								
Unknown	531	VOA-3					1600								
Chlorinated Alkene	544	VOA-3					49,000								
Chlorinated unknown	555	VOA-3					1600								
Chlorinated unknown	606	VOA-3					23,000								
Chlorinated unknown	627	VOA-3					75,000								
Chlorinated alkene	651	VOA-3					9,000								
Chlorinated unknown	684	VOA-3					14,000								
Tetrachloro butadiene	539	VOA-3													13
Hexane	373	VOA-3							6.5						
Alkene	218 238	ABN-3						390 B	590 B						960 B
Ketone	337 314	ABN-3						1500 B	1200 B						2300 B
Unknown	411	ABN-3													1700
C-4 benzene	486	ABN-3													990
Alkane	655	ABN-3													1100

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Table II: ORGANIC ANALYSIS SUMMARY

Site Name/Code Petro Processors LA345 Case Number 3874 Concentration ppb

Sample Station Number and Location / Compound	Scan No.	Fraction /Class	08 1300'SSE of site along low area between braided fork & B.R. bayou	09 2000'S.SE of site channel of divergent fork B.R. bayou	10 Low area N. of braided fork of B.R. bayou 1000'S of site D-2'	10 A-4'	11 1700'S.S.W. of site diverged fork of B.R. bayou	13 2300'SSW of site swamp area at mouth of braided fork B.A. bayou D-2'	13 2-3'	14 2700'SSW of site at mouth of divergent fork of B.A. bayou	15 S.W. of site swamp area at mouth of braided fork B.R. bayou	16 2300'S.W. of site stained soil from beaver pond w/in clarke area D-2'	17 2300'S.W. of site channel of divergent fork of B.R. bayou	18 2500'S.W. of site from swamp area between braided fork of B.R. bayou D-2'	18 2-4'
EPA SAMPLE NUMBER			FB195	FB162	FB197	FB198	FB165	FB186	FB188	FB168	FB169	FB183	FB170	FB177	FB178
MATRIX			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Methylene chloride		VOA-1	62 B	460J B	120 B	44 B	7.3 B	120 B	540 B	5.4 JB	2.1 JB	96 B	6.5 JB	8.0 B	6.2 JB
Benzene		VOA-1						8 JB				7 JB			
1,3-dichloro benzene		ABN-1						250							
1,4-dichloro benzene		ABN-1						110 J							
1,2,4-trichloro benzene		ABN-1						57 J							
Hexachloro butadiene		ABN-1	8900	130,000				170J							
Bis (2-ethyl hexyl) phthalate		ABN-1						77J	63J	1900			4300		
Hexa chloro benzene		ABN-1	35,000	49,000	180J	40J	200J								
1,1,2-Trichloro ethane	184, 202	ABN-3						300B	300B			90B			
1,1,2,2,-Trichloro ethane	429,442	ABN-3			300B	200B		500B	500B			200B			
Sulfur	1420	ABN-3							200			1000			
Phthalate, possibly diiso oct	1698	ABN-3										200			
Alkane	1957	ABN-3										200			
Styrene	381 393	ABN-1	2,000					400							
Aromatic	461	ABN-1						90							
Methyl ethenyl benzene	528	ABN-3	2,000					200							
Unknown PNA	1120	ABN-1						200							
Alkane	1186	ABN-1						100							
Unknown	1199	ABN-1						100							
Unknown	1298	ABN-1						100							
Unknown	1358	ABN-1						80							
Unknown	1374	ABN-1						100							
Unknown	1422	ABN-1						200							
Unknown	1448 1471	ABN-1	4000					200							
Unknown	1587	ABN-1						400							
Unknown	1709	ABN-1						400							
Unknown	1913	ABN-1						100							
Unknown alkane	1954	ABN-1						100							
Unknown	1982	ABN-1						200							
Unknown	1607	ABN-1							90						
Unknown	1824	ABN-1							100						
Unknown	1902	ABN-1							400						
Hexachloro butadiene	848	VOA-1	100												
Acetone		VOA-2		0800 B						50 B	28 B		61 B	40 B	42 B
Cyclohexanone	399,408	ABN-1				100 B									
Penta chloro benzene	1038	ABN-1	6000												
Octa chloro styrene	1399	ABN-1	1000												
Di-n-butyl phthalate		ABN-1								330J			710		
Butyl benzyl phthalate		ABN-1								290J			610		
Phenanthrene		ABN-1											350J		
Chloro benzene		VOA-1		620J											
Alkane	975	ABN-1											520		
Alcohol	1095	ABN-1											938		
Alkane	1170	ABN-1											750		

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Table II: ORGANIC ANALYSIS SUMMARY

Site Name/Code Petro Processors LA345 Case Number 3874 Concentration ppb Page 5 of 7

Sample Station Number and Location			08	09	10	10	11	13	13	14	15	16	17	18	18
Compound	Scan No.	Fraction /Class			0-2'	2-4'		0-2'	2-4'					0-2'	2-4'
EPA SAMPLE NUMBER			FB195	FB162	FB197	FB198	FB165	FB186	FB188	FB168	FB169	FB183	FB170	FB177	FB17
MATRIX			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Toluene	257	ABN-3								580 B	1500 B		1300 B	2700 B	1900
Alcohol	262	ABN-3									550			530	450
Alkene	276	ABN-3								370 B	1200 B		1000B	1100B	1000
Ketone	287	ABN-3								630B	1600B		1200B	2100B	1800
Alkane	301	ABN-3									250			240	540
Alkane	307	ABN-3								740	2000		1500	3800	3800
Alkane	313	ABN-3								330	940		680	1800	1600
Alkane	319	ABN-3								980	2700		1900	5900	4700
Ketone	326	ABN-3								2700B	6900B		5800B	14,000B	9200
Xylene	350	ABN-3												520	350
Unknown	445	ABN-3								240				1800	730
Unknown	550	ABN-3								170				1500	420
Unknown	654	ABN-3												730	
Unknown	733	ABN-3												550	
Unknown	739	ABN-3												1400	
Unknown	747	ABN-3												690	
Unknown	983	ABN-3								1200				5100	1700
Unknown	1113	ABN-3								1000	1600			1900	1100
Unknown	1135	ABN-3								1500				2300	2400
Unknown	1228	ABN-3								790			2000	1100	
Tetra chloro ethene	296	ABN-3													300
Unknown	1173	ABN-3													1200
Chloro alkene	272	VOA-3		7000											
Chloro alkene	403	VOA-3		25,000											
Unknown Chlorinated	514	VOA-3		11,000											
Chloro alkene	544	VOA-3		24,000											
Chlorinated unknown	555	VOA-3		P											
Chlorinated unknown	606	VOA-3		24,000											
Chlorinated unknown	627	VOA-3		60,000											
Chlorinated alkene	651	VOA-3		6,200											
Chlorinated alkene	684	VOA-3		1,780											
Chloro alkene	294	VOA-3		8500											
Unknown	393	VOA-3		2400											
Thiazole	611	ABN-3								280			670		
Alkane	802	ABN-3								300			1200		
Alkane	849	ABN-3								730			5100		
Alkane	894	ABN-3								340			3300		
Alkane	936	ABN-3								350			2400		
Unknown	1245	ABN-3								780	430				
Unknown	1284	ABN-3								1600			4300		
Unknown	1144	ABN-3									520				
Unknown	1161	ABN-3									630				
Dioxane	407	ABN-3											450		
Alkane	824	ABN-3											890		
Alkane	897	ABN-3											1400		

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te Name/Code _____ Case Number _____ Concentra... ... 2 of 1

Sample Station Number and Location / Compound	Scan No.	Fraction /Class	19 SEDIMENT FROM CHANNEL OF BRAIDED FORK OF B.R. BAYOU, 3000' S.W. OF SITE	20 3000' SSE OF SITE NEAR MOUTH OF DIVERGENT FORK OF B.R. BAYOU	21 2500' SE OF SITE NEAR MAIN CHANNEL OF B.R. BAYOU	22 10' N. OF MAIN CHANNEL IN CLEARING 0-14"	23 950' S. OF SITE, 100' N. OF WELL P-19 0-2'	23 DUP.	2-4'	24 30' S. OF MAIN CHANNEL IN CLEARING 0-2'	24 2-4'
EPA SAMPLE NUMBER			FB179	FB163	FB164	FB191	FB199	FB201	FB202	FB206	FB207
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Methylene chloride		VOA/1		8.3B	11B	160B	61B	130B	49B	160B	130B
1,3-dichlorobenzene		ABN/1			260J	1100J					
1,4-dichlorobenzene		ABN/1				1200J					
Hexachlorobutadiene		ABN/1		14,000	350J		91J	90J		1700J	45J
Hexachlorobenzene		ABN/3		32,000	790	54,000	220	320		27,000	1200
1,1,2-Trichloroethane	184202	ABN/3					200B	200B			100B
1,1,2,2-Trichloroethane	429442	ABN/3					500B	500B	300B		500B
Sulfur	1420	ABN/3			600						
Styrene	393	ABN/3		5000						4000	
Unknown	1471	ABN/3				300				1000	
Acetone		VOA/2	10JB	21B					100		
(exanone	408	ABN/3					200B	300B	100B		
Unknown	461	ABN/3					80	80			
Unknown	1673	ABN/3								1000	
Toluene	257	ABN/3	2000B		250						
Alkene	276	ABN/3	940B								
Ketone	287	ABN/3	2000B								
Alkane	301	ABN/3	940								
Alkane	307	ABN/3	3600								
Alkane	313	ABN/3	1600								
Alkane	319	ABN/3	4800								
Ketone	326	ABN/3	15,000B								
Xylene	350	ABN/3	620								
Unknown	550	ABN/3	1600								
Unknown	654	ABN/3	780								
Unknown	983	ABN/3	6600								
Unknown	1113	ABN/3	3600								
Unknown	1135	ABN/3	7000								
Tetra chloroethene	1228	VOA/3	1000								
Unknown	262	VOA/3	390								
Unknown	407	ABN/3	760								
Alkane	1312	ABN/3	1100								
Unknown	1737		4100								
Unknown	1752		990								
chlorobutadiene	539			45							
Unknown	620			33							
Alkene	238				500B						
Ketone	314				2000B						

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Table II: ORGANIC ANALYSIS SUMMARY

Site Name/Code Petro Processors LA345 Case Number _____ Concentration ppb

Sample Station Number and Location			19	20	21	22	23	23	23	24	24				
Compound	Scan No.	Fraction /Class													
EPA SAMPLE NUMBER			FB179	FB163	FB164	FB191	FB199	FB201	FB202	FB206	FB207				
MATRIX			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Unknown	948	ABN/3			530										
Unknown	992	ABN/3			690										
Unknonwn	1000	ABN/3			640										
Unknown	1093	ABN/3			360										
Alkane	1185	ABN/3			900										
Unknown	1213	ABN/3			960										
Alkene or Alcohol	1355	ABN/3			1800										
Alkene	1023	ABN/3		2100											
Unknown	1117	ABN/3		1900											
Unknown	1148	ABN/3		21,000											
Unknown	1283	ABN/3		5000											
Unknown	1332	ABN/3		5500											
Unknown	1344	ABN/3		4300											
Alkane	1360	ABN/3		6900											
Unknown	1371	ABN/3		1500											
Unknown	1385	ABN/3		2900											
Unknown	1467	ABN/3		3200											
Unknown	1593	ABN/3		10,000											
Unknown	945	ABN/3			760										
Unknown	975	ABN/3			1100										
Unknown	1010	ABN/3			480										
Alkane	1246	ABN/3			920										
Alkane	1325	ABN/3			900										
Unknown	1380	ABN/3			3300										
Unknown	1444	ABN/3			1500										
Unknown	1465	ABN/3			1900										
Unknown	1505	ABN/3			3200										

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CASE NUM. 4386/SAS1575F

SITE NAME/CODE: Petro Processors/LA345

CONCENTRATIONS (ppm ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	F5139	F5149							
Methylene Chloride	VOA	1	8B	7B							
Acetone	VOA	2	12								
1, 1- Dichloro Ethene 1	VOA	1	26								
2 Butanone	VOA	2	48B	33B							
Trichloro Ethene 1	VOA	1	23								
Benzene 1	VOA	1	26								
Toluene 1	VOA	1	23								
Chloro Benzene 1	VOA	1	23								
Alkane 607	VOA	3	1J B	2J B							
Unknown 842	"	3	3J	2J							
Chlorinated cpd-c15 980	"	3	2J								
Unknown 1056	"	3	1J								
Chlorinated cpd, c15 - isomer of 980 1129	"	3	47J								
1,1,2-Trichloro--1,2,2-trifluoro ethane 393	"	3		3J B							
Alkane 940	"	3	P B	3J B							
Unknown - Siloxane 1006	BNA	3	30J								
" " 1179	"	3	30J								
Unknown 1735	"	3	1180JB								
Unknown 1683	"	3	1905 B	150JB							
Matrix Type			WATER	WATER							
Sample Station Number			03	22							
Sample Station Location			FROM BORE-HOLE, 750' S. OF SITE	FROM BORE-HOLE, 10' N. OF MAIN CHANNEL							

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1/30/85

(1)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

3-2-85
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: Thomas N. Smith
RT- Geologist
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
07	2-20-85 1058	Sediment, 1250' SE of site	Soil	24 oz	NO	NO
20	2-20-85 1225	Sediment, 3000' SSE of site	Soil	24 oz	NO	NO
21	2-20-85 1225	Sediment, 2500' SE of site	Soil	24 oz	NO	NO
09	2-20-85 1435	Sediment, 2000' SSE of site	Soil	56 oz	yes	yes
11	2-20-85 1505	Sediment, 1700' SSW of site	Soil	56 oz	yes	yes
04	2-20-85 1538	Sediment, 750' SSW of site	Soil	80 oz	yes	yes
17	2-21-85 1005	Sediment, 2200' SW of site	Soil	56 oz	yes	yes
15	2-21-85 1045	Sediment, 2600' SW of site	Soil	56 oz	yes	yes
14	2-21-85 1140	Sediment, 2700' SSW of site	Soil	56 oz	yes	yes

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Dave Ewell, owner

(Signature)

3-2-85
(Date)

DISTRIBUTION: One copy facility representative
One copy for inspector's records
Original to Regional Office

(2)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

3-2-85
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: Thomas W. Smith
FIT - Geologist
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
02	2-21-85 1410	Auger-hole, 0'-8', 450' S of site	soil	80 oz	yes	yes
01	2-21-85 1445	Auger-hole, 0'-4', 450' SSW of site	Soil	48 oz	NO	NO
01	2-21-85 1445	Auger-hole, 0'-4', 450' SSW of site	Water	2 gal	yes	yes
18	2-22-85 1055	Auger-hole, 0'-4', 2800' SW of site	Soil	48 oz	NO	NO
18	2-23-85 1135	Auger-hole, 0'-4', 2800' SW of site	Water	1½ gal	NO	NO
19	2-22-85 1215	Sediment, 3000' SW of site	Soil	56 oz	yes	yes
03	2-22-85 1540	Auger-hole, 0'-18', 750' S of site	Soil	56 oz	yes	yes
03	2-22-85 1540	Auger-hole, 0'-18', 750' S of site	Water	8 oz	NO	NO
16	2-23-85 1110	Auger-hole, 0'-2', beaver pond area	Soil	56 oz	yes	yes

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Dave Ewell, owner

(Signature)

3-2-85
(Date)

DISTRIBUTION: One copy facility representative
One copy for inspector's records
Original to Regional Office

(3)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

3-2-85
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: Thomas N. Smith
FIT- Geologist
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDED
16	2-23-85 1120	Avgn-hole, 0'-2', from beaver pond area	Water	1½ gal	NO	NO
13	2-23-85 1250-1255	Avgn-hole, 0'-4', 2300' SSW of S. tie	Soil	80 oz	yes	yes
13	2-23-85 1300	Avgn-hole, 0'-4', 2300' SSW of S. tie	Water	1½ gal	NO	NO
22	2-23-85 1504	Avgn-hole, 0'-14', 10' N of channel	Soil	56 oz	yes	yes
22	2-23-85 1510	Avgn-hole, 0'-14', 10' N of channel	Water	8 oz	NO	NO
06	2-23-85 1536-1550	Avgn-hole, 0'-4', 1300' SE of S. tie	Soil	104 oz	yes	yes
06	2-23-85 1610	Avgn-hole, 0'-4', 1300' SE of S. tie	Water	1½ gal	NO	NO
10	3-1-85 1213	Avgn-hole, 0'-4', 2000' NE S. tie	Soil	48 oz	NO	NO
08	3-1-85 1305	Avgn-hole, 0'-2', 600' SSE of S. tie	Soil	56 oz	yes	yes

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

Dave Ewell, owner

(Signature)

3-2-85
(Date)

DISTRIBUTION: One copy facility representative
One copy for inspector's records
Original to Regional Office

(4)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

3-2-85
(Date)

RECEIPT FOR SAMPLES

NAME AND TITLE OF EPA REPRESENTATIVE: Thomas N. Smith
FIT- Geologist
(Signature)

SAMPLES COLLECTED:

SAMPLE NUMBER	TIME	PLACE COLLECTED	TYPE	VOLUME	SPLIT SAMPLE REQUESTED	SPLIT SAMPLE PROVIDE
08	3-1-85 1325	Aragon-Lobo, 0'-2', 1200' SE of site	water	1½ gal	NO	NO
23	3-1-85 1605	Aragon-Lobo, 0'-4', 450' S of site	soil	10 oz	yes	yes
23	3-1-85 1645	Aragon-Lobo, 0'-4', 450 Ft S of site	water	1½ gal	NO	NO
24	3-2-85 1015	Aragon-Lobo, 0'-4', 30' S of Arroyo	soil	80 oz	yes	yes
24	3-2-85 1305	Aragon-Lobo, 0'-4', 30' S of Arroyo	water	1½ gal	NO	NO
05	3-2-85 1320	Aragon-Lobo, 0'-4', 1000' S of site	soil	48 oz	NO	NO

ACKNOWLEDGEMENT OF FACILITY REPRESENTATIVE

The undersigned acknowledges that the samples described above have been collected.

NAME, TITLE AND ADDRESS OF FACILITY REPRESENTATIVE:

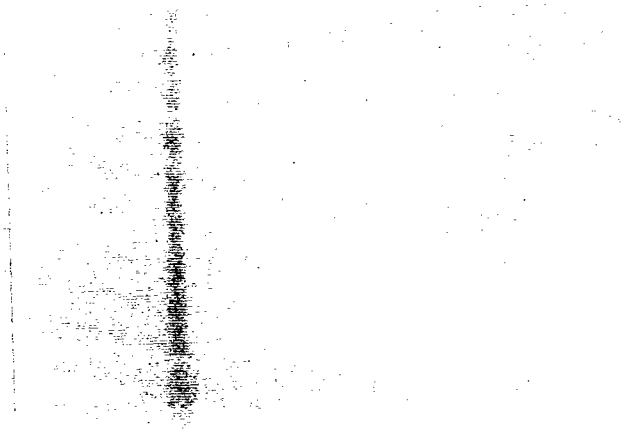
Dave Ewell Owner

(Signature)

3-2-85
(Date)

DISTRIBUTION: One copy facility representative
One copy for inspector's records
Original to Regional Office

REFERENCE 3



MARTHA A. MADDEN
SECRETARY

OFFICE OF WATER RESOURCES

J. DALE GIVENS
ASSISTANT SECRETARY

June 19, 1987

To: J. Dale Givens

From: Michael H. Schurtz

Subject: Update on chemical contamination in Fishes, Devils Swamp Lake

Reference here is made to my memo of March 13, 1987 (copy attached) concerning preliminary results on PCB concentrations in fishes from Devils Swamp. Analytical results have been received from both the DHHR Laboratory and our Water Pollution Control Division laboratory as followup to these earlier preliminary results. These followup results include re-analysis of samples reported earlier (in March) as well as analysis of samples not previously analyzed. Attached is a tabulation of both the DHHR data and data for two samples analyzed by our lab using GC/MS.

These followup results indicate that data submitted in March (which reported PCB levels in edible fish tissue approaching or in excess of the U.S. FDA Action Level of 2.0 ppm) are suspect. These more recent confirmatory results indicate PCBs levels to be below 1.0 ppm in the range of 0.1 to 0.6 ppm, depending upon species and specimen size. However, these followup analyses additionally confirm the presence of hexachlorobenzene (HCB) and hexachloro-1,3-butadiene (HCBD). These chemicals were suspected earlier but were not found in the preliminary analyses reported in March.

My interpretation of these data is that the preliminary results on PCBs reported in March are not valid and should not be considered as representative of the fish tissue contamination. Therefore, my assessment is that at this time the PCB levels in fish from Devils Swamp, although of concern, do not represent a situation as potentially serious as the recent Capitol Lake situation where PCBs were documented at levels approximately an order of magnitude higher. However, these followup analyses indicate levels of HCB and HCBD that do exceed the "emergency guidelines" recently utilized by DHHR and DEQ in assessing the seafood contamination in certain areas of the Calcasieu estuary. The guidelines are 0.060 ppm for HCB and 0.060 ppm for HCBD, both applicable only to edible tissues.

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I have been advised by Dr. Joyce Mathison, State Epidemiologist for DHHR, that she is preparing a recommendation for the issuance of a fishing and consumption advisory on Devils Swamp Lake. If DEQ is requested by DHHR to post advisory signs at access points to the lake, it will be necessary for our Legal Division to contact the landowners for permission to undertake such a posting since the Devils Swamp Lake is privately owned.

It is my opinion, based upon our 1985 and 1986 investigations in the Devils Swamp watershed, that the source of HCB and HCBD contamination is the "Petro Processors" site located on the northern end of Devils Swamp itself. Analyses of soil and sediment from drainage tributaries from other potential sources have not indicated contribution of HCB and HCBD.

MHS:pc

attachments

cc: Bobby Savoie, DHHR

MKS 6/19/87

FISH TISSUE ANALYSES - DEVILS SWAMP LAKE

CONCENTRATIONS EXPRESSED AS PARTS PER MILLION (PPM)-MICROGRAMS/GRAM WET WEIGHT

SPECIES/SAMPLE #	WEIGHT (LBS)	STANDARD LENGTH (inches)	TOTAL LENGTH (inches)	TOTAL PCBs	PENTACHLOROBENZENE	HEXACHLOROBENZENE	HEXACHLORO-1,3-BUTADIE
LARGEMOUTH BASS 176-860730-01A	3.75	14.75	16.75	0.379	0.024	0.073	0.224
LARGEMOUTH BASS 176-860730-02A	2.62	14.50	16.75	0.589	ND	0.028	0.032
LARGEMOUTH BASS 176-860730-03A	3.38	14.75	17.00	0.531	0.031	0.122	0.270
LARGEMOUTH BASS 176-860730-04A	2.62	13.50	15.50	0.298	0.019	0.086	0.158
LARGEMOUTH BASS 176-860730-05A	1.44	11.00	12.75	0.304	0.005	0.041	0.050
LARGEMOUTH BASS 176-860730-06A	2.06	13.00	15.25	0.398	ND	0.030	0.038
LARGEMOUTH BASS 176-860730-07A	1.00	10.00	11.75	0.290	ND	0.029	0.045
LARGEMOUTH BASS 176-860730-08A	0.69	9.00	10.50	0.200	ND	0.024	0.021
CHANNEL CATFISH 176-860730-12A	1.81	15.25	17.00	0.174	ND	0.035	0.014
BIGMOUTH BUFFALO 176-860730-13A	1.56	11.75	13.75	0.292	ND	0.006	0.028
SMALLMOUTH BUFFALO 176-860730-17A	0.56	7.75	9.00	0.117	ND	0.015	0.026
WHITE BASS 176-860730-19A	0.62	9.75	11.50	0.324	ND	0.019	0.011
WHITE CRAPPIE 176-860730-23A	0.69	8.50	10.00	0.300	ND	0.015	0.039
WHITE CRAPPIE 176-860730-29A	0.31	6.50	8.00	0.139	ND	0.010	0.013

DATA from LA DHHR - Gas Chromatography with Electron Capture Detection
ND = Not Detected
All chemical data are for edible portions

LARGEMOUTH BASS 176-860730-01A	3.75	14.75	16.75	0.201	0.016	0.034	0.065
LARGEMOUTH BASS 176-860730-03A	3.38	14.75	17.00	0.324	ND*	0.058	0.052

DATA from LA DEQ - Gas Chromatography/Mass Spectrometry
* Pentachlorobenzene not detected; 0.007 ppm of 1,4-dichlorobenzene and 0.003 ppm of tetrachlorobenzenes were determined
All chemical data are for edible portions

REFERENCE 4

Louisiana Department of Environmental Quality

PATRICIA L. NORTON
SECRETARY

OFFICE OF WATER RESOURCES

J. DALE GIVENS
ASSISTANT SECRETARY

RECEIVED
JUL 21 1986
LA. DEPT. OF
ENVIRONMENTAL QUALITY
IAS DIVISION

July 18, 1986

M E M O R A N D U M

TO: Patricia L. Norton, Secretary
J. Dale Givens, Assistant Secretary

FROM: Michael H. Schurtz

RE: Rollins Environmental Services (LA), Inc.
Devil's Swamp Lake

A survey of the types and amounts of anthropogenic chemical contamination of sediments in Devil's Swamp Lake was undertaken by the Water Pollution Control Division in August - October, 1985. This survey was undertaken as a follow-up to a similar project conducted during the summer of 1980. The primary objective of these efforts was to monitor any possible deposition and accumulation of potentially toxic chemicals (primarily organics and metals) in the lake sediments as a result of discharges from the Rollins Environmental Services (LA), Inc. facility located north of Baton Rouge on Scenic Highway (U.S. Highway 61).

Wastewater is discharged from this facility via outfall 001 (schematic of Rollins property attached) and flows in a generally west to southwesterly direction, after exiting Rollins property, following the stream bed of an unnamed, intermittent tributary of Devil's Swamp Lake. This lake is a man-made oxbow excavated from Devil's Swamp during 1973 and is surrounded by low-lying bottomlands that grade into cypress swamp in a westerly direction toward the Mississippi River (map attached). The lake is located just to the northwest of the Baton Rouge Harbor Canal. It is subject to sheet flow from Baton Rouge Bayou through Devil's Swamp, discharges and stormwater runoff from the Rollins property, and stormwater runoff from Agway Industries, Baton Rouge Port Commission property and Allied Chemical Corporation (LA0005479) located to the south of the Rollins property. The lake is also subject to seasonal backwater flooding of the Mississippi River.

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Monitoring was accomplished with the collection and analysis of sediment samples from the lake bed and various channels within the limited watershed that drains into the lake. The monitoring strategy entailed the rationale that sediments represent a good "barometer" by which to detect the possible accumulation of environmentally refractory and potentially toxic chemicals. Because of retention time, limited flushing and very low flow-through velocities, sediment deposition of chemical pollutants within a semi-enclosed system such as a small lake is an important consideration in assessing effects of treated wastewater effluents carrying low-level concentrations of refractory contaminants which may be otherwise analytically ephemeral in water.

Laboratory analyses were performed for the U.S. EPA "priority pollutant" organics and metals. Results of the 1980 sediment samples indicated the occurrence of a number of anthropogenic chemicals at levels that could be considered typical for aquatic systems subject to non-point and point source surface and atmospheric inputs from an urban/industrial area. Compounds that were detected included polynuclear aromatic hydrocarbons and chlorobenzenes at low parts per billion (ppb) to threshold parts per million (ppm) levels. These compounds are associated with the combustion of fossil fuels, urban activities and the petrochemical industry. The levels detected did not represent alarming amounts; however, an input of a wide variety of chemicals was indicated and a potential for accumulation was noted. No pesticides or polychlorinated biphenyls (PCBs) were found above detection levels (0.010 ppm) in 1980. It should also be noted that water samples and selected fish samples were analyzed in 1980 and results for these were unremarkable, exhibiting much fewer compounds and very much lower concentrations than the sediments. Data on trace metals were also unremarkable.

Results for the August 26, 1985, sediment samples were quite similar to the 1980 samples in the types and amounts of compounds detected. A significant exception to this general similarity was the detection of PCBs at concentrations of up to 4 ppm in sediments from the northeastern end of Devil's Swamp Lake most proximal to the entrance of the Rollins effluent. PCB concentrations in the sediments declined with distance away from the effluent entry point to 117 ppb (0.117 ppm) at the opposite end of the oxbow. Additionally, PCBs were detected at 4.5 ppm in the Rollins effluent channel sediments at a point approximately midway between the lake and the Rollins property.

These analytical data (which were available in October 1985) were considered significant because of two factors: (1) the occurrence of PCBs in 1985 at the parts per million level, which probably represents concentrations at least 50 times that which could reasonably be considered background levels for aquatic sediments, and (2) the apparent absence of PCBs at quantifiable levels in 1980. "Background" in this context equates to levels that have

resulted primarily from global atmospheric dispersion and deposition through fallout and rainout since the early 1930s when PCBs were first manufactured and used in various industrial applications. The Water Pollution Control Division considers a level of 20 ppb (0.020 ppm) in sediments as an upper limit for background levels. This number does not have regulatory significance, but is based upon a background alert level suggested by the U.S. Geological Survey. It was established statistically to indicate concentrations in the upper 15-20 percent of values from a nationwide ambient sediment network maintained by the Geological Survey.

These 1985 findings provided circumstantial evidence that Rollins Environmental Services (LA), Inc. was the probable source of PCBs in Devil's Swamp Lake. The levels found were not deemed to represent an immediate threat to public health nor are they comparable to levels (>50 ppm) necessary to qualify as "hazardous" under U.S. EPA regulations pursuant to the Toxic Substances Control Act (TSCA) or the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or "Superfund"). However, it was determined that they did represent a potential threat to the aquatic ecosystem of the lake through bioaccumulation. Therefore, further investigation to confirm the 1985 findings and to identify all possible sources was deemed necessary.

As a consequence, additional sampling was undertaken on March 18, 1986, at the same locations that yielded elevated levels in 1985, as well as additional locations within the drainage system on Rollins property and other drainage ditches entering the lake from other industrial facilities in the area. Analytical results of these samples (Table 1) definitely confirm the 1985 findings of low part per million concentrations in sediments of Devil's Swamp Lake. Additionally, results from samples taken in the wastewater effluent ditch on the Rollins property indicate PCB occurrence in sediments as high as 14.2 ppm. Samples from the drainage channels entering the lake from sources other than Rollins, indicate levels that approximate background levels and are several orders of magnitude lower than results from the Rollins drainage system. <u>These findings indicate Rollins to be the source which is contributing to the sediment accumulation of PCBs in the lake system.</u>

Rollins Environmental Services (LA), Inc. discharges under authority of an NPDES permit (LA0038245) issued by the U.S. EPA. This permit limits PCBs in the effluent to a maximum of 35 ppb as a total concentration for dissolved and adsorbed particulate phases. This limit specifies an individual maximum of 5 ppb for each of seven commercial PCB mixtures (Aroclors 1016, 1221, 1232, 1242, 1248, 1254 and 1260). Monitoring is required once per month. A full array of other parameters, including the rest of the 129 priority pollutants, are limited by the permit and regular periodic monitoring is required. This permit was issued in April 1985, and the limitations for PCBs became effective on January 16, 1986. Effluent monitoring data submitted by Rollins for the period October 1980, through January 1985, do not indicate any PCB levels in excess of the method detection level (MDL), which varied from 1-36 ppb over this monitoring period.

In August 1984, a proposed state permit (WP0413) was sent to Rollins. Issuance of the final state permit is currently pending final administrative approval. The current final version requires twice per month monitoring for the priority pollutant PCBs (Aroclor 1016, 1221, 1232, 1242, 1248, 1254 and 1260) with a 5 ppb daily maximum limitation for each Aroclor mixture (total PCB limit is 35 ppb) which tracks the NPDES permit except for the more frequent monitoring requirement in the state permit. These limitations apply to outfall 001.

Currently, the only state permit in place is the Louisiana Stream Control Commission permit revised in 1976. No specific monitoring or effluent limits for PCBs are included in this permit.

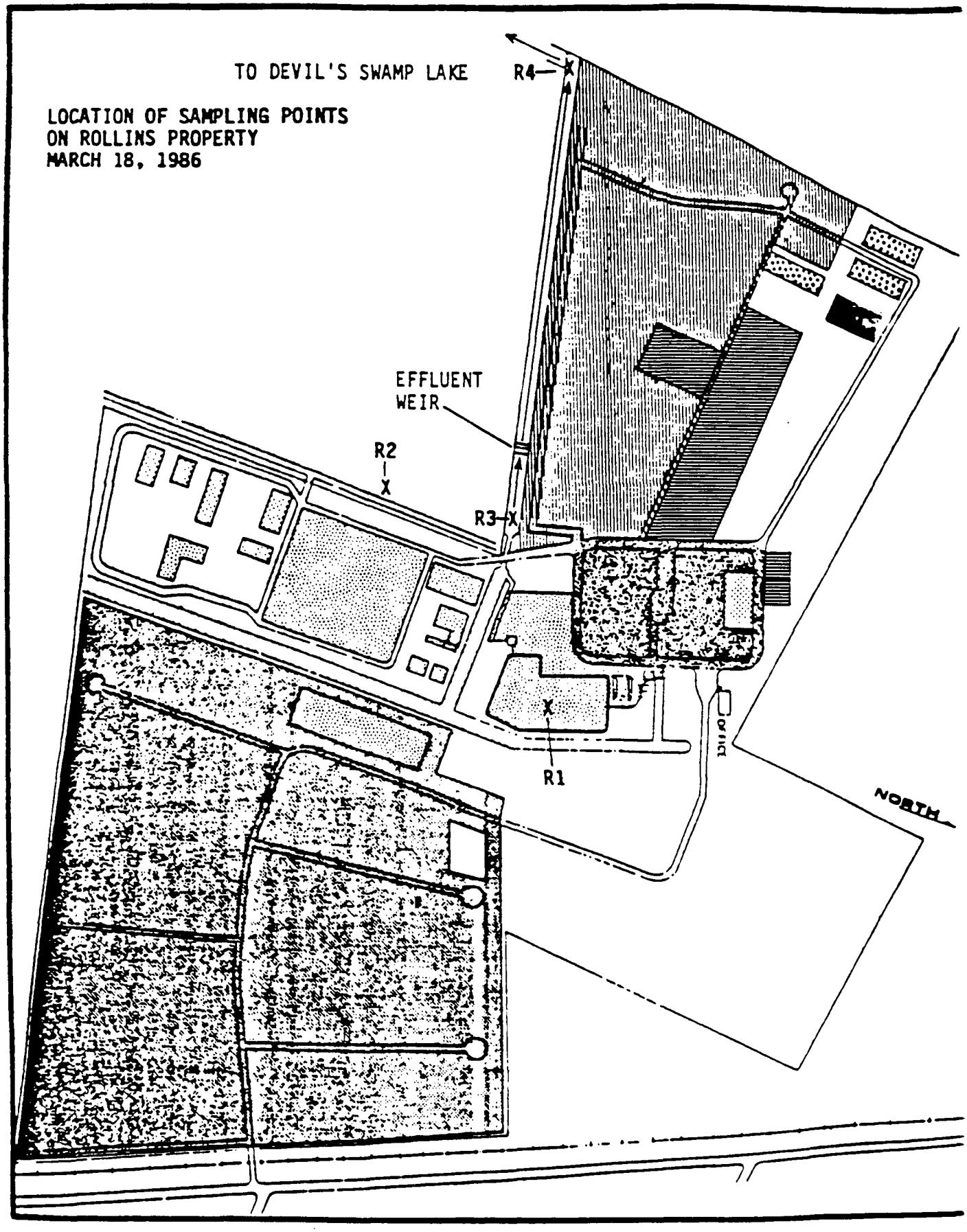
In light of the analytical findings of the August 1985, and March 1986 samples, it is recommended that DEQ reevaluate the proposed final state permit. In particular, the discharge to Devil's Swamp Lake should be reconsidered. The PCB data indicate that the lake is acting as a reservoir or "sink" for these compounds even though their input is possibly low level. Additionally, data for other organics indicate the presence of a wide variety of potentially toxic anthropogenic compounds (see Tables 2 & 3). Data indicate a definite potential for accumulation of certain of these chemicals, although probably not as accelerated as for PCBs.

It is further recommended that a Compliance Order be issued to Rollins Environmental Services (LA), Inc. requiring them to immediately undertake an on-site investigation and sampling effort to determine the source of PCBs within their facility. Although the company is not authorized to dispose of PCB wastes (50 ppm or greater content), it is probable that they have handled industrial wastes otherwise designated that have contained PCBs below the regulatory threshold.

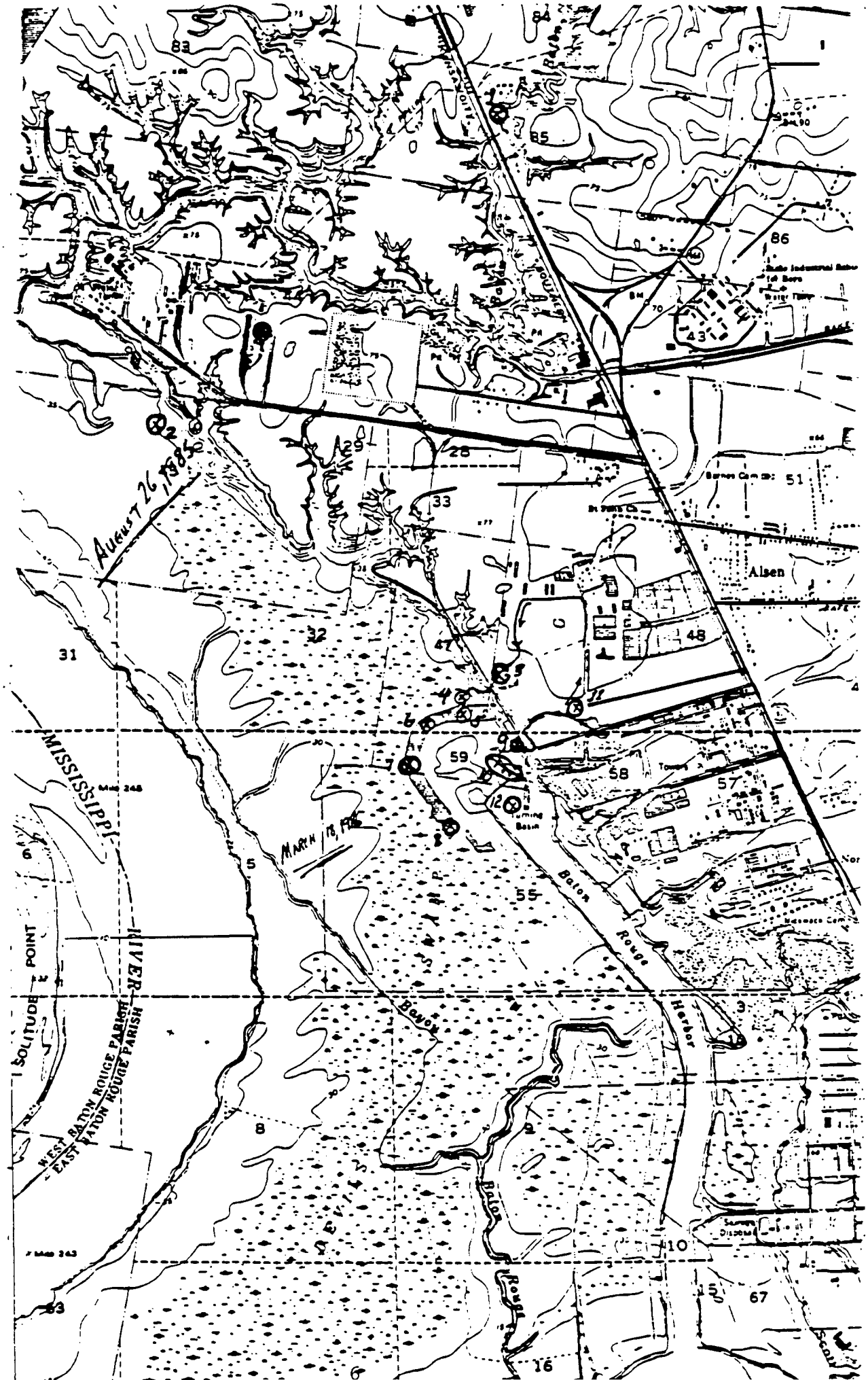
Attached are individual laboratory reports of PCBs for the 1985 and 1986 samples. Additional attachments include the volatile and extractable organics data for the 1985 samples. Fish samples collected in March 1986, to assess possible bioaccumulation, are under analysis by the WPCD Organics Analysis Lab at this time and results should be available later this summer.

MHS:lfh

cc: Louis R.C. Johnson
Bob Hannah
Gary Aydell
Marion Fannaly



Schematic layout of Rollins' facility.



August 26, 1985
March 18, 1986
Alsen
Baton Rouge Harbor
Baton Rouge
Bayou
MISSISSIPPI RIVER
SOLITUDE POINT
WEST BATON ROUGE PARISH
EAST BATON ROUGE PARISH
Turning Basin
Towers
Barnes Cem
St Pauls Ch
Mile 248
Mile 243
83
84
85
86
43
51
29
28
33
32
31
47
48
59
58
57
55
5
6
8
10
15
16
67
63

Table 1

Parts Per Million (ppm) - dry weight basis - mg/kg

PCB Concentrations in Sediments

Devil's Swamp Lake Drainage System

Location		Sampling Period: March 18, 1986	Sampling Period: August 26, 1985
R1.	Rollins Environmental Services, Inc. Stabilization Pond sediment	Total PCBs - 0.96	Not Collected
R2	Rollins perimeter ditch (outside fence line) west of "aeration basin" and old "Hy-Purle" area	Total PCBs - 0.027	Not Collected
R3	Rollins effluent ditch between "old 002" outfall point and 001 effluent weir	Total PCBs - 14.2	Not Collected
R4	Rollins effluent ditch at 90 degree turn adjacent to "mixing shed"	Total PCBs - 2.21	Not Collected
1	Baton Rouge Bayou - 200 yards upstream of U.S. Hwy. 61 (Scenic Hwy.)	Not Collected	0.012
2	Baton Rouge Bayou - 200 yards downstream from Petro Processors site	Not Collected	0.19
3	Rollins effluent ditch approximately 100 feet upstream of railroad (above culverts)	Total PCBs - 2.18	4.54
3A	Rollins effluent ditch at "pool" immediately above railroad track (below culverts)	Total PCBs - 3.0	Not Collected
3B	Railroad right-of-way ditch immediately NW of Rollins effluent ditch (west side of railroad tracks)	Total PCBs - 0.0055	Not Collected
3C	Railroad right-of-way ditch immediately SE of Rollins effluent ditch (west side of railroad tracks)	Total PCBs - 0.0034	Not Collected
4	Rollins effluent ditch below railroad at "delta" entering Devil's Swamp Lake	Total PCBs - 2.31	4.11
5	Devil's Swamp Lake - mid-lake directly opposite effluent delta	Total PCBs - 3.1	1.39
6	Devil's Swamp Lake - mid-lake adjacent to up gradient reach of "swamp embayment"	Total PCBs - 0.24	1.19
7	Devil's Swamp Lake - mid-lake adjacent to down gradient reach of "swamp embayment"	Total PCBs - 0.12	0.44
8	Devil's Swamp Lake - mid-lake at SE reach of oxbow	Total PCBs - 0.11	0.117
9	Culvert on west side of Agway parking lot	Total PCBs - 0.0039	Not Collected
10	Composite sample (5 cores) from swamp area below "landfill" on south-southwest side of Agway property	Total PCBs - 0.188	Not Collected
11	Right-of-way drainage ditch along north-side of "Port Commission access road" at Rollins fence line	Total PCBs - 0.046	Not Collected
12	Baton Rouge Harbor Canal at turning basin	Total PCBs - 0.077	Not Collected

Table 3

Devil's Swamp Lake Survey - Sediments

Priority Pollutants (ppb) Extractable Organics (dry weight basis)

	1985 Station #								1980 Lake Stations	
	1	2	3	4	5	6	7	8	Ranges	# of Stations
Phenol	93	140			66			140	3800-15100	(5)
4-chloro-3-methyl phenol		110			130	41				
2,4,6-trichlorophenol					66					
4-nitrophenol		2200			950					
2-methyl-4,6-dinitrophenol		1200			1500	650				
Pentachlorophenol		710			600					
1,3-dichlorobenzene*		970				67		430	} 50 - 1400	(3)
1,4-dichlorobenzene*		380					2800	400		
1,2-dichlorobenzene*								270	650	(1)
1,2,4-trichlorobenzene		320	33				2500	140	410	(1)
Hexachlorobenzene		>10000	180			200			90 - 140	(2)
Hexachlorobutadiene		>15000							<10	(2)
Dimethyl phthalate	2000									
Diethyl phthalate	200	330	930	2200	450	330				
Di-n-butyl phthalate	790	830			130	1500	2000			
Butylbenzyl phthalate					110					
Bis(2-ethylhexyl)phthalate	4600	>7100		590	230	490	1200	2900		
Naphthalene		160		170	160	460		450	2200	(1)
Acenaphthalene		140	500	290	140	270			10 - 760	(5)
Acenaphthene	200	590	78	22			3600	220	20 - 1500	(5)
Fluorene	250	940	120					290	150 - 920	(3)
Phenanthrene	840	5000	180	120	57	91		190	} 30 - 1700	(5)
Anthracene	3300	1600	280	270	65	200				
Fluoranthrene	220	4200	170	150	57	110		58		
Pyrene	1200	4800	470	310	150	380	3300	58	50 - 970	(5)
Benzo(a)anthracene	120	2300	120	100	39	110		700		
Chrysene	200	2400	120	150	69	140		700	20 - 1200	(4)
Benzo(b)fluoranthrene		2500							} 30 - 560	(4)
Benzo(k)fluoranthrene		2000								
Benzo(a)pyrene		2800							100 - 1100	(4)
N-nitrosodiphenylamine			120	59		87			30 - 510	(3)
N-nitroso-di-n-propylamine							2100			

Remarks: Station 2 - influenced by Petro Processors site
Station 3 - Rollins ditch

Table 2

Devil's Swamp Lake Survey - Sediments

Priority Pollutants (ppb) Volatile Organics (VOC)

1985 Station #

	1	2	3	4	5	6	7	8	1980 Lake Stations Ranges	# of Stations
Vinyl chloride		4								
Dichloromethane										
1,1-dichloroethane		<1								
t-1,2-dichloroethene		2								
1,2-dichloroethane (EDC)	<1	6								
1,2-dichloropropane	<1	<1								
Trichloroethene		2								
1,1,2-trichloroethane		<1								
Toluene	3			900	110			5	40 - 940	(3)
Chlorobenzene		<1	<1		<1	<1	<1	7	10 - 190	(2)
Ethylbenzene								23	4200	(1)
1,3-dichlorobenzene*		56	1	<1	<1		3	7		
Dichlorobenzenes (1,2 & 1,4)*		6	<1	<1	<1	2	<1	2		
Chloroethane								13		
Chloroform								<1		

Remarks: Station 2 - influenced by Petro Processors site
Station 3 - Rollins ditch
Station 4 - 8 - influenced by Rollins

* See extractable organics

REFERENCE 5

EE
Enter the next ring distance
GEMS> next

Enter program execution mode: B (batch) or I (interactive)
GEMS> i

Bayou Baton Rouge
LATITUDE 30:35: 0 LONGITUDE 91:13:15 1980 POPULATION

				SECTOR			
KM	0.00-.400	.400-.800	.800-1.61	1.61-3.23	3.23-4.84	4.84-6.45	TOTALS
S 1	0	0	0	0	0	115	115
S 2	0	0	0	0	383	2538	2921
S 3	0	0	0	877	2544	5736	9157
S 4	0	0	32	0	0	7728	7760
S 5	0	0	0	0	0	0	0
S 6	0	0	0	0	295	0	295
RING TOTALS	0	0	32	877	3222	16117	20248

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Esc for ATtention, Home to SWitch ¤ Capture Off ¤ On: 00:07:25

REFERENCE 6

Public Health Assessment for

PETRO-PROCESSORS OF LOUISIANA, INC.

BATON ROUGE, EAST BATON ROUGE PARISH, LOUISIANA

CERCLIS NO. LAD057482713

SEPTEMBER 30, 1992

Initial Release

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
Agency for Toxic Substances and Disease Registry

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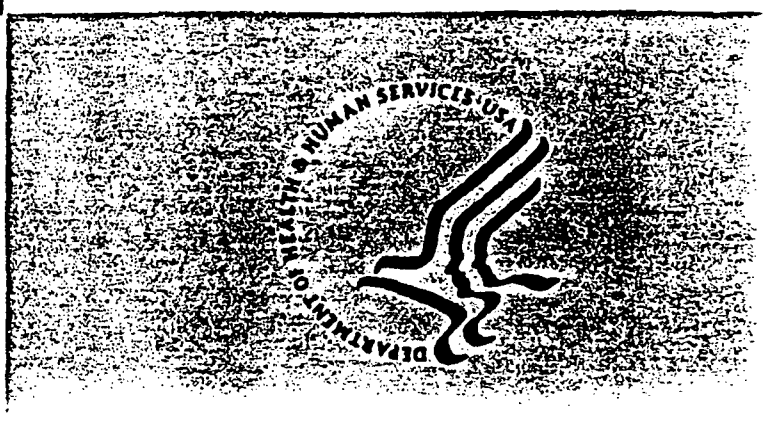


SUMMARY

The Petroprocessor of Louisiana, Inc. (PPI) site, located in Scotlandville, East Baton Rouge Parish, LA, is on the National Priorities List (NPL). The PPI site consists of two waste disposal areas: the Brooklawn area and the Scenic area. Petrochemical processes dumped their waste in those areas. A Consent Agreement, negotiated with the generators, included a framework for developing a remedial plan. Negotiated remedial activities, were begun in November 1987 at Brooklawn site and were terminated in December 1987. They were terminated before completion because they resulted in air concentrations of volatile compounds that exceeded Occupational Safety and Health (OSHA) limits. A supplemental remedial action plan was developed by the responsible parties and approved by the Environmental Protection Agency (EPA) and Louisiana Department of Environmental Quality (LDEQ) in September 1989.

Both areas contain volatile aromatic hydrocarbons, volatile chlorinated hydrocarbons, polyaromatic hydrocarbons, and metals. Contaminants have been detected in samples from four environmental media (soil, ground water, surface water, and air) at the Brooklawn area, and in three media (soil, ground water, and air) at the Scenic area. Contaminants in fish and sediment have been detected off-site of the Brooklawn area in Bayou Baton Rouge and Devil Swamp. The LDEQ and the Department of Health and Hospital posted Devil's Swamp Lake in October 1987 against swimming and fish consumption. No off-site monitoring has been conducted at the Scenic area.

The site is considered a public health hazard because risk to human health exists from past, present, and future exposure to hazardous substances through: (1) volatilization of contaminants during remedial activities which could be a source of exposure for the workers onsite, workers of industries located close to the site, and for residents, (2) ingestion of contaminated fish and wild life, (3) ingestion of contaminated ground water, (4) and dermal contact with contaminated sediments.

BACKGROUND

Site Description and History

Petroprocessors Inc., (PPI) operated two waste disposal areas, the Scenic area and the Brooklawn area, in an area north of Baton Rouge (Figure 1, Appendix B). The two areas are located about one mile apart and cover a total of 62 acres. There are two distinct topographic features which characterize both areas:

1) They are located adjacent to Bayou Baton Rouge and are partially within its flood plain.

2) A portion of each area is situated on an upland terrace above the flood plain of the bayou. Lower portions of the Brooklawn area also lie within the flood plain of the Mississippi River.

The Agency for Toxic Substances and Disease Registry (ATSDR) released a Preliminary Health Assessment of this site on December 6, 1990. The conclusions were that the site represented a public health concern. Potential exposures were considered to be inhalation of contaminants by area residents, industrial workers, and remedial workers, ingestion of contaminated fish and wildlife, and exposure to contaminated groundwater. The preliminary health assessment recommended a groundwater investigation and monitoring, investigation of surface water runoff with off-site migration of contaminants, biota sampling, area demographic review, air sampling, and the prevention of site erosion.

The Brooklawn area:

Brooklawn area is located on Brooklawn Drive, about 1.9 miles west of the intersection of U.S. Highway 61 and Brooklawn Drive. It occupies an area of 55 acres and includes four identifiable areas of waste disposal and contamination: the bluff, the batture area that contains an upper lagoon and a lower lagoon, and the Cypress Swamp (Figure 2, Appendix B). Bayou Baton Rouge borders the north and west sides of the area. Lagoons are located in the flood plain of the Mississippi River. In June 1983, the cypress swamp was flooded by the Mississippi River, and flood waters came within four inches of overtopping the lagoons. The lower lagoon was pumped from February 1-6, 1985 and the upper lagoon was pumped from February 27-March 2, 1985, to prevent overflow into the bayou channel. An old channel of the bayou runs through part of the area and may be a conduit for migration of wastes. Disposal activities at the Brooklawn area began in 1969 and continued until 1980. Initial

waste disposal was into unlined pits in the bluff area. The underlying soil has attenuating sand and clay layers.

In July of 1980, the U.S. Justice Department, state and local governments jointly filed suit against PPI and several waste generators. Since mid-1980 the defendant industries and regulatory agencies have conducted several investigations at the site. On December 6, 1983, a Consent Decree for site closure was developed with the participation of all parties and the court. The consent decree specified that the defendant industries (represented by NPC Services, Inc.) investigate, design, and implement remedial and long term monitoring actions at the PPI site. It also mandated that the industry defendants conduct an investigative study to verify the accuracy of the existing monitoring systems and to determine the nature, scope, extent, and likelihood of additional contamination at the site. This study (Remedial Planning Activities, RPA) was approved in September of 1986. The remedial design and construction plan (RDCP) prepared by NPC was finalized and approved by the U.S. Environmental Protection Agency (EPA) and the state in June of 1987. Air emissions occurred during remedial efforts. As a result, all waste handling activities at the site stopped in December 1987. The remedy for the site will not involve excavation of the materials, but will consist of ground water and liquid waste pumping and treatment. A clay cap will also be constructed over Brooklawn and Scenic areas.

The Scenic Highway area:

The Scenic area is located on the west side of U.S. Highway 61, south of the bridge over Bayou Baton Rouge. It is approximately seven acres in size and began as a large unlined pit, 750 feet long by 450 feet wide and 20-24 feet deep which was excavated prior to 1964 to supply soil for the construction of a nearby highway. This area was in operation from 1965 to 1969. Highway 61 delineates the eastern area boundary, and Bayou Baton Rouge borders the northern and western boundaries. Waters from the bayou are in direct contact with highly eroded bluff walls along the western boundary. Future erosion could threaten Scenic area integrity. The Scenic area contains an estimated 3.5 million cubic feet of contaminated material, including chemical waste such as organic and volatile compounds as well as industrial waste (empty drums, pipe, plastic, etc....). The disposal pit was abandoned in 1968 and uncovered liquid wastes were exposed at the surface until 1973. The pit was closed and covered with plastic and soil in 1974.

Site Visit

On May 3, 1991, staff from the Louisiana Office of Public Health (LOPH), Section of Environmental Epidemiology, and the Department

of Environmental Quality (LDEQ), Inactive and Abandoned Sites section, conducted a site visit. The site was observed from outside the fence line.

The Brooklawn disposal area is located just south of the Schuylkill metals plant. The area is enclosed by a six foot high fence made only of barbed wire. Two signs were posted, one identifying the site as hazardous and another sign indicating "No Trespassing". No evidence of contamination was visible from the fence line. Twelve ground water monitoring wells were visible as well as recovery pipes. A waste water treatment plant was located near the site to treat surface water and ground water before discharge into the bayou. There was a network of pipes and drains called a Recovery System installed onsite. The system is designed to collect contaminated water and organic chemicals. The cypress swamp underwent drainage and backfilling. It is now covered with grass. One lagoon was left while the other had been filled. NPC (representing the responsible parties) began construction of a road down the side of Bayou Baton Rouge, downstream from the Brooklawn area, into the upper portions of Devil Swamp. The road will provide access for excavation of contaminated soil from the bottom of the Bayou.

Observed populations at risk included approximately 200 employees at the plants across the road (Reynold Metals and Schuylkill). The surrounding area is rural. An extensive industrial corridor extends to the south. The terrain include an elevated bluff and a low lying area adjacent to Bayou Baton Rouge. An old channel of the Bayou runs through part of the Brooklawn area.

The Scenic area was a borrow pit. It is surrounded by a six foot barbed wire fence with a locked gate. No evidence of contamination was visible from the fence line. There were houses within 200-300 yards of the site. Surrounding land uses include recreational activities (fishing and hunting) and grazing of live stock. The terrain at the site includes a high bluff and steep banks dropping to Bayou Baton Rouge along the site's western edge.

Demographics, Land Use and Natural Resources Use

The Petroprocessor site is located within the community of Alsen, 1989 population 4,178, and within East Baton Rouge Parish, total 1989 population 384,006. Sixty-six percent of the parish population is white; thirty-four percent non-white. According to 1980 census data, the average annual income for East Baton Rouge Parish is above the average for the state and the number of persons in East Baton Rouge Parish considered below poverty level (14.9%) is below the yearly average for Louisiana (18.6%). The percent of High

School Graduates in East Baton Rouge Parish is 72.3% as compared to 57.7% for the state of Louisiana.

The largest community in the area of the site is the city of Scotlandville, which is located within a one mile radius of the site, 1980 population 15,113. The city of Baker is situated approximately three miles east of the Scenic Highway site and is the second largest community in this vicinity, 1980 population 12,896. Demographic information on each of these cities is as follows:

1980	City of Baker	City of Scotlandville
Percent of High School Graduates	71.8	52.9
Percent of Persons for whom poverty status has been established	8.1	33.2

Data is not available for Alsen on specific demographic characteristics. However, a visit to this area revealed that the neighboring towns of Baker and Scotlandville are much more reflective of the Alsen population on socioeconomic measures than is East Baton Rouge parish overall.

Information available for the Petroprocessor Brooklawn site indicates that populations at risk include 200 employees who work for industrial complexes (Skyukill and Reynolds), both located within 400 yards north of the site. Institutions, schools, churches and several industries are located within a two-miles radius of the Petroprocessor site. The Louisiana Training Institute (LTI), is a facility for juvenile offenders which houses approximately 282 offenders. It is located just off the Scenic Highway in Alsen, LA. The Juvenile Reception and Diagnostic Center is a facility which determines placement for the juvenile offenders and houses an average of 200 juveniles. Southern University Agriculture Department is located off of Scenic Highway in the town of Alsen, LA. Approximately 90 persons are present at this facility. Two schools are located in Scotlandville and are within a two miles radius from the Petroprocessor Scenic area: Crestworth Elementary School has an average yearly enrollment of 325 students and Crestworth Middle School which is adjacent to Crestworth Elementary has an average yearly enrollment of 650 students. Both of these schools are located within the Crestworth residential subdivision and approximately 350 homes are in or just outside of this subdivision. In addition, the community of Alsen, LA. has one Head

Start school with an average enrollment of 360 children. There are approximately 15 residences, and 50 people who live within a one mile radius of the Petroprocessor Scenic area. Several of these people reside on a dead-end street which at times becomes blocked due to railroad crossings on the other end of the street.

The land surrounding both Brooklawn and Scenic sites are rural. Land use includes recreational, hunting, grazing, and agricultural. At least 20 families within a one-mile radius of the Petroprocessor Scenic and or Brooklawn site have personal vegetable gardens in their yards. Several acres of land adjacent to the Petroprocessor Scenic area are used agriculturally to raise corn and it appears that truck farming of this crop is ongoing. Bayou Baton Rouge is located in this area and is used for recreational water activities as well as fishing and hunting. A few residential wells exist in the area. One well is within a half-mile of the Scenic area.

The Petroprocessor Inc. of Louisiana (PPI) site, including the Brooklawn area and the Scenic area, is not on the Toxic Chemical Release Inventory (TRI) reports. Four major industries located around the PPI site are Reynolds Metal Co., Schuylkill Metal Co., Rollins Industry, and Kaiser Alumimum Co. Only Schuylkill Metal Co. is listed on 1989 TRI data. Toxic substances such as sulfuric acid, aluminum (fume or dust), antimony compounds, lead compounds, and arsenic compounds were reported by Schuylkill Metal Co.. Total annual amount of environmental release of these chemicals from this company is 229,440 pounds which includes 7,068 pounds of air emission, 293 pounds of water discharges and 222,079 pounds release to on-site land in 1989.

Health Outcome Data

Cancer incidence from the Louisiana Tumor Registry (1983-1987) were evaluated to determine any adverse health outcomes that may be plausibly related to aromatic hydrocarbons, chlorinated aromatic hydrocarbons and polyaromatic hydrocarbons (PAH's), the contaminant of greatest concern found on the site.

Data was obtained from the LA Office of Vital Statistic (1982-1988) to determine plausible adverse health effects due to lead.

See Appendix C for a further description of the offices and databases mentioned.

COMMUNITY HEALTH CONCERNS

Residents and industrial workers of the local communities which surround the Petroprocessor Site (Alsen, Baker, and Scotlandville) have reported a variety of health concerns to the LOPH, ATSDR, EPA, and the National Institute for Occupational Safety and Health (NIOSH).

NIOSH has conducted an evaluation in response to a request submitted by representatives of the Aluminum, Brick, and Glass Workers International Union, the final document for this evaluation has not yet been completed. Workers employed at the Reynolds Metals Company Calcite Coke Plant, complained of eye, nose, and throat irritation, foul odors and nausea during removal of petrochemical contaminated soils from the adjacent "Brooklawn" and "Scenic Road" sites. A survey of complaints has been completed. Both plant management and union officials were concerned that the proximity of the plant to these sites pose a potential health hazard. The primary concern was related to waste handling operations in which airborne concentrations of organic vapors exceeded safe levels. Waste handling operations were halted when EPA learned that airborne concentrations of organic vapors including hexachlorobutadiene (HCBD) exceeded safe levels. On March 23, 1991, representatives from EPA and LDEQ participated in a meeting which addressed proposals for real time monitoring of chemical exposures, and safeguards to ensure that chemical exposures do not present a health hazard to neighboring industries and the general public.

In January 1991, EPA hosted an Open House meeting for the residents of Alsen and other surrounding communities. At this meeting the local citizens submitted a list of questions and concerns relating to the Petroprocessor Site remediation activities and both on-site and off-site contamination (See Appendix D). This list was later presented to LOPH as community concerns. The majority of the concerns from this list were regarding land uses in the area (e.g. hunting, fishing, logging ,hiking, boating, hot air ballooning and gas exploration). Local citizens expressed utmost concern that a comprehensive map of all houses, schools, businesses, churches and recreational areas for the community of Alsen be made current and accessible in the event of an emergency. In addition, they wanted an evacuation plan for residents living on dead-end streets which are blocked by railroad crossings at the other end. Other areas of concern included ground water contamination, possible airborne exposure during remediation to workers conducting remediation and to workers employed at local industries located within a one mile radius of the Petroprocessor Site.

The LOPH organized and participated in three meetings (3/12/91, 4/17/91, 5/29/91), with a group of citizens and representatives designated as the Community Advisory Committee for this area. The members of this Committee include citizens recognized as community leaders, workers from local industries, the State Representative for the district, and concerned citizens from the community. LOPH explained to this committee that a Health Assessment was in the process of being written for Petroprocessors and that a Community Health Concern section would be included in the Assessment.

The purpose of these meetings was to document the concerns of members and to enlist the leadership of those participants in the organization of the first of two Public Meetings to be held by LOPH. During the course of these meetings citizens shared complaints that not enough warning signs against hunting or fishing have been posted at Devils Swamp and Bayou Baton Rouge. Workers at Rollins Co., a company located across the street from the Brooklawn site, complained of past toxic exposure and are concerned because this land is located over an aquifer. Also, citizens requested that tissue assays be conducted for fish and wildlife in the area and that more data be obtained and included in the Health Assessment.

The first of the two LOPH Public Meetings was held on May 14, 1991. All staff members of LOPH Section of Environmental Epidemiology; the Regional Sanitarian for East Baton Rouge Parish, the Regional Representative of ATSDR and the State Representative for this district were present. The objectives of this meeting were to gather all community health concerns, provide a presentation of the site, an explanation of the public health assessment process, and the roles of the agencies involved.

Citizens were invited to voice their concerns publicly or express them in writing. Necessary writing materials were provided for those who did not wish to speak at the meeting and were collected at the end of the meeting.

Local residents who participated in this meeting shared their health concerns which included allergies, skin rashes, headaches, sinus infections and nose bleeds. Residents of Springfield Road, Alsen, also expressed concerns about a high incidence of cancer on this road. Issues of groundwater contamination, surface water contamination at Bayou Baton Rouge, erosion occurring at the site coupled with high flood water levels, off-site contamination not believed to be completely characterized and inadequate posting of warning signs were also mentioned.

More general areas of discontent; the Public Health Assessment should have occurred many years earlier; and this Assessment will be inconclusive if the other sources of exposure for the area (e.g.

industrial emissions from plants in the vicinity of Petroprocessor site) are not considered collectively.

ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS

On-site Contamination

Since there is a large number of chemicals found both on-site and off-site, we have classified the contaminants into 3 categories (1) volatile chlorinated hydrocarbons, (2) chlorinated aromatic hydrocarbons, (3) inorganics compounds.

Brooklawn area

As stated earlier, the Brooklawn area consists of four generally identifiable areas of waste disposal or contamination: the bluff area, the batture that contains the upper and lower lagoons, and the cypress swamp.

The bluff waste disposal area contained about 18,500 cubic yards of industrial waste debris such as bulk rubbers and polymers, drums containing semi-solid wastes, empty drums, white chalky solids, black wet solids, metallic slag, and oily wastes.

The batture area (batture is an alluvial land between a river, or a low water stage and a levee) has upper and lower lagoons which are within the Mississippi River flood plain. The upper lagoon contains about 28,000 cubic yards of sludge-like wastes, the lower lagoon contains about 12,500 cubic yards of similar materials. Wastes disposed in the lagoons included drummed wastes, blocks of rubber, plastic wastes, cardboard materials, yellow white granular and rubber materials, and materials described as black, stringy, tar-like sludge.

Contamination beneath the lagoons has been detected to depths of 60 feet below grade and these are the areas containing the highest contaminant concentrations detected at the PPI site. Free phase liquid and dissolved ground water contaminant plumes have been identified beneath the lagoons and adjacent batture areas, extending south of Hall Buck Road. Specific contaminants associated with the lagoons include volatile chlorinated hydrocarbons, aromatic chlorinated hydrocarbons, and total metals (lead).

Soils and sediments in the cypress swamp have been contaminated to depths of up to 6.5 feet and/or down to the mudline with black,

oily wastes. The cypress swamp is estimated to contain about 38,000 cubic yard of black oily, tar-like materials.

Soil

Soil at the Brooklawn area was contaminated with volatile chlorinated hydrocarbons, aromatic chlorinated hydrocarbons and metals. Levels of contamination are presented in (Table 1.1, Appendix A).

Soil samples from several monitoring wells at the bluff indicated contamination throughout with volatile chlorinated hydrocarbons and total metals. Contaminant distribution did appear to be heavy in the 15 to 17 foot deep region. Lead was from 24-44 ppm. Soil in the 45-47 foot deep interval were heavily contaminated with volatile chlorinated hydrocarbons.

As the batture and lagoon areas are adjacent, they will be considered together. The spill area subsurface contains high concentrations of volatile chlorinated hydrocarbons from areas near the surface to a depth of 15 feet. Samples taken at depths of 15-17 feet east of the lower lagoon have HCBD levels of 2800- 6400 ppm while samples at 31-32 feet deep indicate heavy contamination with volatile chlorinated hydrocarbons at levels of 1410-2820 ppm. The characterization of the wastes disposed in the batture and lagoon area indicates, in addition to volatile chlorinated hydrocarbons, polyaromatic hydrocarbons at (32-155 ppm) and aromatic hydrocarbons at (18-1160 ppm).

Data gap: No dust sampling took place.

Surface water

At Brooklawn area two waste ponds are several feet above the natural drainage. The upper pond is more heavily contaminated than the lower pond. The major contaminants detected in the water are volatile chlorinated hydrocarbons and polyaromatic hydrocarbons. Within the upper pond, contamination increases with depth. The major volatile chlorinated hydrocarbons in the ponds are slightly water soluble and tend to volatilize into the air. The air concentration calculated at the water-air interface for 1,1,2 trichloroethane was 100 ppm, 1,1,dichloroethane 11,000 ppm, and 1,1,2, trichloroethane 2330 ppm.

During high rainfall the ponds may overflow into the bottom area and into Bayou Baton Rouge to the southwest contaminating the bayou water to an undetermined distance.

Groundwater

During December 1981, four monitoring wells were installed at the Brooklawn area. Drilling depth ranged from 32 to 53 feet. A very dark reddish-brown oily liquid was encountered from monitoring well BL-3 at 53 feet deep, located at the south end of the lagoon area (Figure. 3, Appendix B). Well Bl-3 exhibited a significant difference from the other monitoring wells due to the presence of more aromatic compounds, especially chlorinated benzene (9,500 ppm). In addition, sample analysis from BL-3 showed 1,1,2,2, tetrachloroethane of 310,000 ppm (31%), 1,1,2 trichloroethane 130,000 ppm (13%), 1,2 dichloroethane 110,000 ppm (11%), hexachlorobutadiene 92,000 ppm (9.2%), and hexachlorobenzene 9,500 ppm. These volatile chlorinated hydrocarbons saturated the lower strata. Ground water samples collected from wells located southwest of the lagoons and near the southeast corner of cypress swamp indicate elevated concentrations of total volatile chlorinated hydrocarbons compounds in the range 50-500 ppm. The wells are screened at depths ranging from 0-20 feet mean sea level (MSL). Samples from monitoring wells in the batture area screened between elevation 10 and 30 feet MSL indicated total volatile chlorinated hydrocarbon concentrations in the range of 500-5000 ppm. Ground water sampled from wells in the -40 MSL sand indicate total volatile chlorinated compounds was found to be less than 5 ppm. The data thus, implies that the lateral extent of ground water contamination appears to be confined to the area between southwest of cypress swamp and the batture area southeast of the lagoons.

Contamination appears to be laterally confined to the northeast side of Bayou Baton Rouge but the extent of the contaminated ground water zone downstream along the bayou has not been fully determined, it extends as a narrow band well. Wells in the batture screened at elevations lower than 20 feet below MSL and at all elevations already outside the contaminated band appear to be clear of organic and volatile chlorinated compounds. Thus it appears that the subsurface migration is not only horizontal but also vertical.

In 1984, ground water sampled at the Brooklawn indicated contamination with volatile chlorinated hydrocarbons in sufficient quantity to produce airborne concentrations (Table 1.2, Appendix A).

During 1988, liquid recovered from monitoring wells at the Brooklawn area has a COD (chemical oxygen demand) greater than 925,000 mg/l, indicating that the composition is primarily organic constituents.

Data gap: monitoring wells extend to a depth of 53 feet deep.

Air:

The release of contaminants from this site into the air during remedial activities is a major transport mechanism. The goal of the perimeter air monitoring program is to assure that no one (workers on-site nor off-site workers in close industries) will be exposed to concentrations of any contaminant in excess of NIOSH Recommended Exposure Limits (RELs). Threshold Limit Values (TLVs), as defined by the American Conference of Governmental Industrial Hygienists (ACGIH) were used when NIOSH RELs were not available.

In 1987, when remediation first occurred, the fence line exposure excursions indicated that the TLV for HCBD was exceeded on 6 separate days in November and December along Brooklawn Road. The TLV excursion for HCBD ranged from 1.2 to 5.6 times the TLV. Air monitoring data from the waste mixing and solidification area shows that for a mixture of compounds, all data sets were above the TLV and ranged from 7 to 72 times the TLV. Airborne contaminants were collected using glass sealed XAD-2 sorbent tubes and charcoal sorbent tubes. HCBD was the primary compound routinely detected above the TLV and it was considered the primary concern (Table 1.3, Appendix A). Therefore, it was selected as an indicator compound to reflect air quality.

Samples collected during periods when no waste handling activities were being conducted on the PPI site indicate that all "background" contaminants were present at levels well below the associated TLV levels of each contaminant. Air monitoring data from 4-29-90 to 9-22-90 for three chemicals indicates levels of contaminants within acceptable TLV's: hexachlorobenzene (HCB) <0.001 ppm, HCBD <0.001, and 1,2,4 trichlorobenzene <0.05 ppm.

Scenic Area

The Scenic area consists of two areas of waste disposal or contamination: 1) the bluff area, the primary disposal site and 2) the batture area a relatively small area of waste burial to the west of the bluff (Figure 4, Appendix B).

The bluff area contained rubber, plastic, wood and occasionally drummed wastes. Soil samples obtained from this area were described as stained black, oily material. Approximately 88,000 cubic yards of mixed industrial wastes were identified for excavation from the bluff.

Contamination in the batture area was detected to depths of approximately 14 feet. Free phase liquid and ground water contaminant plumes appear to originate near the southern edge of the bluff. Contaminants detected in samples from the Scenic area

site included: volatile chlorinated hydrocarbons (VCH) such as hexachlorobutadiene (HCBD), hexachloroethane, and 1,1,2,2-tetrachloroethane; aromatic chlorinated hydrocarbons such as hexachlorobenzene (HCB), and pentachlorobenzene; and polyaromatic hydrocarbons (PAH) such as naphthalene (Table 2.1, 2.2, Appendix A).

Soil

Impounded water bodies do not exist at the Scenic Highway area. Bayou Baton Rouge flows through the area. Surface soil samples indicate low to moderate contamination with volatile chlorinated hydrocarbons (160-900 ppm) and aromatic chlorinated hydrocarbons (5.5-137 ppm). Soil core data indicate that volatile chlorinated hydrocarbons persist throughout the subsurface at low levels of contamination (0.01 ppm, 1,2 dichloroethane). At the 35-37 foot region, the number of compounds and their relative concentrations in the soil increase (5 ppm, 1,2 dichloroethane). Aromatic chlorinated hydrocarbon were observed in greater variety and tended to concentrate near the surface at five to seven feet (HCBD 900 ppm) than in the deeper cuttings sampled at 15-17 feet where HCBD is 3.4 ppm. PAHs were not observed in any of the core samples. Contamination extends from the subsurface to a depth of 25 feet.

Data gap: No sampling for dust particulates was performed.

Groundwater

Contamination has been detected outside the pit area. Leachate was coming through the walls of the pit and rising to the surface. Results from the ground water sampled from monitoring wells indicate volatile chlorinated hydrocarbons in sufficient quantity to generate vapo- water equilibrium phase concentrations. PAHs were not present. Ground water was found to be contaminated in the vicinity of the buried batture waste. Well GM-7 indicated total volatile chlorinated hydrocarbons and aromatic hydrocarbons at levels of 500-5000 ppm. Elevated concentrations of ground water contaminants were also found in well GM-3 and GM-4 south of the buried terrace wastes. Volatile chlorinated hydrocarbons and aromatic hydrocarbons ranged from 5-50 ppm (Figure 5, Appendix B).

The Scenic area is underlain by interbedded layers of sand, silt and clay. Ground water in the shallow alluvial deposits flows southwest from the bluff area towards Bayou Baton Rouge. The contamination has migrated to a maximum depth of about 40 feet below the surface elevation and average 25 feet below the surface elevation. Most of the well waters contained organic chemicals and volatile chlorinated hydrocarbons. This indicates downward permeation of waste liquid. The contamination has stayed within the

limit of the waste deposit area with the exception of a layer of light grey fine sand where it has migrated about 50 feet from the pit. Ground water samples collected from a well S-UG-1 located at -40 feet MSL zone upgradient indicates that it is situated in the leading edge of a contaminated plume.

Some of the contaminants identified during 1988, are highly mobile in soils. Data for ground water samples from well S-UG-1S which is a shallow up gradient well located in the north west corner of the site shows 96 ppb 1,2-dichloroethane, and 75 ppb 1,1 dichloroethane. Since the compounds observed in the well are highly mobile and soluble, this indicates that S-UG-1S is situated in the leading edge of a contaminated plume. The degree of contamination that may be moving off-site is difficult to determine due to lack of sampling.

Data gap: No sampling for surface water or air took place at the Scenic area.

Off-site Contamination

Brooklawn area

Soil

In February 1985 the field investigation team (FIT) from EPA Region VI Office of Ecology and Environment Inc., collected soil samples from twenty three locations (Devil's Swamp). A total of thirty five soil samples were collected to determine the nature and extent of possible contaminant migration from the Brooklawn facility into the area known as Devil's Swamp.

Hexachlorobutadiene and hexachlorobenzene were detected in all but five of the soil sample stations, HCBD in the range of (460-300 ppm) and HCB (5.6-54 ppm). Also four of these stations showed significant levels of contamination with volatile chlorinated hydrocarbons.

Seventeen soil samples showed heavy metals contamination. The most significant are elevated concentrations of lead that range from 22-319 ppm (ambient background range from 14-17 ppm).

Sediment

In 1980 sediment samples from Devil's Swamp indicated the occurrence of polyaromatic hydrocarbons and aromatic chlorinated hydrocarbons. In August 1985 data on sediment samples indicated the presence of a wide variety of potentially toxic compounds such as HCB (>10 ppm) and HCBD (15 ppm) and, >7100 ppm for Bis-phthalate.

Sediment samples taken from the northeastern end of Devil's Swamp Lake proximal to the entrance of the Rollins Environmental Inc., effluent showed PCBs at concentration of up to 4 ppm. The Water Pollution Control Division (WPCD) considers a level of 0.020 ppm in sediments as an upper limit for background levels. Additional sampling was undertaken on March 1986. The analytical results of samples taken in the waste water effluent ditch on the Rollins property indicate PCB occurrence in sediment. PCB's levels ranged from 0.11 ppm to 14.2 ppm. The PCBs data indicate that Devil's Swamp is acting as a reservoir for these compounds that bioaccumulate rather than biodegrade in the environment.

Surface Water

In 1985 the FIT collected water samples from 23 locations in Devil's Swamp near Baton Rouge, LA., to determine the nature and extent of possible contaminants migration from the Brooklawn facility into the area known as Devil's Swamp. Volatile chlorinated hydrocarbon (HCBD and HCB) are the only compounds detected in significant concentrations in the water samples. Drinking water standards (SDWA) for total arsenic, barium, cadmium, chromium, iron, lead, manganese and mercury were all exceeded.

Levels were not mentioned in the data available.

Air:

During waste excavation activities in June 1987, a mixture of volatile chlorinated hydrocarbons exceeded the TLV. However, HCBD was the primary compound surpassed at both the Schuylkill fence (0.024-0.023 ppm) and Reynolds fence (0.029 ppm). The regulated TLV for HCBD is 0.020 ppm. All waste handling operation ceased. The monitoring scheme for measuring airborne HCBD concentration involved using HNU detectors coupled with thermal desorption, purge and trap GC analysis using XAD-2 adsorption tubes.

The airborne concentration levels would have been too low for any significant exposure contribution to off-site neighboring workers, due to inhalation and skin adsorption. During September 1990, EPA air monitoring conducted on Reynolds metals plant property confirms that only HCBD was detected at levels below 0.001 ppm.

Fish

From the fall of 1986 through the spring of 1987, the LDEQ analyzed a series of fish samples from Devil's Swamp for residues of observed chemicals in edible tissues (fillets). The tissue results indicated that the levels of (HCB) and (HCBD) exceeded the guidelines of Louisiana Department of Health and Hospitals (LDHH)

and LDEQ. This level is 0.060 ppm for either HCB or HCBD, applicable only to edible tissues. The HCB levels ranged from 0.0-0.122 ppm and HCBD levels ranged from 0.0-0.270 ppm (Table 5, appendix A). Due to this study and earlier sediment screening, the Louisiana Water Pollution Control Division and LDHH posted Devil's Swamp in October 29, 1987 with signs advising the public against swimming or taking and consuming fish and other aquatic organisms from the lake. No sampling took place for the other biota i.e, plants and animals though the area is used for hunting and agricultural purposes.

Scenic Area

Surface water

Surface water runoff is not captured at the Scenic area. Runoff at this site flow into Bayou Baton Rouge. Analysis of two surface water samples, one taken from a seep at the bluff overlooking the bayou and the other from a down stream off-site location, indicate that contamination from chlorinated hydrocarbons was very high to an extent that volatilization of these compounds was in sufficient quantity to produce airborne concentration in excess of the TLV 8. Tetrachloroethylene at the downstream site exceeds the TLV 8 of 50 ppm. Other contaminants detected were HCBD, HCB, tetrachloroethane and 1,1,2 trichloroethane.

Data gap: no levels of contaminations were mentioned in the data available.

Ground Water

Data gap: Off-site ground water monitoring did not take place.

Air

Scenic area remained inactive regarding any construction on the waste handling problem.

Data gap: No off-site air monitoring was undertaken.

Soil

Data gap: No documentation was provided on the degree of soil contamination that migrated off-site. Soil particles could be transported off-site through erosion of the bluff by Bayou Baton Rouge.

Sediments and Biota

Data gap: No sampling and analysis of sediment and aquatic organisms from Bayou Baton Rouge is available to determine off-site bioaccumulation of contaminants in sediment and biota.

Quality Assurance and Control (QA/QC)

Environmental sampling has been conducted periodically with various types of samples collected at different times and locations and using various sampling procedures. Because these samples have been analyzed by methods having different detection limits, results have been reported in different units, and levels of QA/QC have varied from study to study, a comparison of the results is difficult. No documentation of sample handling and preservation is available. The analysis of air samples includes data on blanks but not on the analysis of duplicates, split samples, or standards. No discussion of recovery efficiency or analysis is included. Although some monitoring data gathered, analyzed, and validated by regulatory agencies appear to have undergone laboratory QA/QC procedures, no QA/QC information has been provided for most of the analytic data received. In particular, data before 1985 have no QA/QC documentation.

Physical Hazards

The site itself is fenced and does not present an easy route for entrance. There are guards on duty 24 hours a day. The only physical hazards present are those associated with construction activities.

PATHWAYS ANALYSES

Exposure pathways are identified by examining environmental and human components that lead to contact with contaminants. A pathway analysis considers five elements: a source of contamination, transport through an environmental medium, a point of exposure and a route of human exposure, and an exposed population. The environmental component consists of the first three elements, i.e., source of contamination, media and transport, and point of exposure. The human exposure component consists of the last two elements, i.e., route of human exposure and the receptor population. A completed exposure pathway is one in which the five elements are evident and indicate that exposure to a contaminant either has occurred in the past, is currently occurring, or will occur in the future. A potential exposure pathway is one in which one or more elements is not clearly defined but could be present. Potential pathways indicate that exposure to a contaminant could have occurred in the past, could be occurring now, or could occur in the future.

Environmental Component

Pathway Name	Source	Environmental Media	Point of Exposure
soil	PPI	soil	site, and nearby residential yards
sediments	PPI	sediments	Devil's swamp Bayou Baton Rouge
surface water	PPI	surface water	Devil Swamp Bayou Baton rouge
air	PPI	air	nearby residential and industrial corridor
production water wells	PPI	ground water	industries
residential wells	PPI	ground water	residences
fish	PPI	fish	residences

Human Exposure Component

Pathway Name	Route of Exposure	Exposed Population	Time
soil	ingestion dermal contact	workers residents	past present future
sediment	dermal contact	children residents	past current future
surface water	dermal contact ingestion	children residents	past present future
air	inhalation	workers on-site and nearby industries. residents	past
production wells	inhalation skin contact	users of wells	future
residential wells	ingestion	users of the wells	future
fish	ingestion	fish eaters	past present future

Completed Exposure Pathways

Soil

Past, current, and future exposure pathways are likely from contamination of surface and subsurface soil at two points of exposure: the site and residential yards of people on Springfield Road living directly across Scenic Highway. Contamination of the points of exposure has probably occurred because of several environmental transport mechanisms. These mechanisms include transport of site contaminants by wind, surface runoff, flooding, excavation, and dust particles.

Soil ingestion and dermal contact are considered routes of exposure, particularly for workers on-site, who were observed not using protective measures during our site visit.

Residents on Springfield Road and residents living directly across Scenic Highway from the Scenic area are likely to be exposed to

soil contaminants but since sampling data on residential yards are lacking the degree of exposure cannot be assessed.

Sediments

Past, current and future exposure to polyaromatic hydrocarbons and chlorinated aromatic hydrocarbons exists from contamination of two points of exposure, Devil's Swamp and Bayou Baton Rouge.

Devil's swamp: Past exposure through dermal contact and ingestion to residents who uses Devil's Swamp for fishing and swimming could have occurred. Presently there is an advisory on Devil swamp. However, the present and future exposure exists for those who do not follow the advisory.

Bayou Baton Rouge: Bayou Baton Rouge flows by both areas: Brooklawn and Scenic. There is a direct connection between the bayou and the waste liquid in the disposal area. In fact, the slopes of the fill area directly abut the bayou in two places where bluff erosion may cause waste material to immediately enters the water course. Present and future exposure pathways through dermal contact exist because residents have access to bayou Baton Rouge.

Sediment data from the bayou is required to determine the degree to which exposure is occurring.

Surface water

Past, current and future exposure pathways are likely from surface water contamination at Devil's Swamp and Bayou Baton Rouge.

Bayou Baton Rouge: At the Brooklawn area the two waste ponds are several feet above the natural drainage. During high rainfall the ponds overflow into the bottom area and into Bayou Baton Rouge to the southwest contaminating the bayou water. At the Scenic area the only surface water is the bayou bordering it on the east and flowing southward. Surface water flowing over and through the waste fill drains to this bayou. Therefore, residents who get access to the bayou are likely to get exposed to the contaminated surface water through dermal contact.

Devil's Swamp: Past exposure for fish eaters and swimmers through dermal contact and ingestion did exist however, present and future exposures are reduced due to the presence of an advisory.

Surface water data for Bayou Baton Rouge is required to determine the degree to which exposure is occurring.

Air

Past exposure from contamination of ambient air through inhalation did exist. On-site and off-site air data show migration of HCBD from the site during excavation activities. Because HCBD evaporates into the air from contaminated soil and materials on the site during excavation, ambient air downwind of the site along Springfield Road and the industrial neighbors was contaminated. Future exposure is unlikely to occur because EPA is supervising air monitoring activities to ensure compliance with the threshold action levels.

Fish

Past, current and future exposure pathways were likely from contamination of fish in Devil's Swamp. Fish in Devil's Swamp absorbed HCB and HCBD either directly by ingesting contaminated water and sediment or indirectly by consuming other fish. Louisiana Water Pollution Control Division and Louisiana Department of Health and Hospital posted an advisory for Devil Swamp in October 29, 1987.

People were fishing in that area prior to the advisory and the possibility of future exposure to contaminated fish may continue if the health advisory is not observed.

Potential Exposure Pathways

Production water wells

There are 12 known production water wells (industrial usage) within one mile radius of Brooklawn and Scenic areas that are pumped from the "400-foot" aquifer. Future exposure pathways are possible since the waste sources at the site pose a threat to the "400-foot" aquifer. The deepest contamination found at Brooklawn site is about 40 feet below mean sea level or 70 feet below the surface elevation. This occurs in one isolated pocket between Bayou Baton Rouge and Hall Buck Marine Road, just south of the lower lagoon. The contamination seems to follow between two geologic layers below the ground which were formed by alluvial and pleistocene terrace deposits to the bottom layer of brownish-grey silty sand and grey clay. The average depth of contamination at Brooklawn area is 50 feet below the surface elevation. The contamination has migrated from 0 feet to approximately 500 feet from the pit boundaries. Four monitoring wells at a depth of 32-53 feet indicated high levels of volatile chlorinated hydrocarbons.

At the Scenic area the contamination has migrated to a maximum depth of 40 feet below the surface elevation and averages 25 feet below the surface elevation. The contamination has stayed within the limit of the waste deposit area with the exception of a layer of light grey fine sand, where it has migrated about 50 feet from the pit.

Users of these production wells represent the exposed population. If the 400 feet aquifer becomes contaminated then exposure to the volatile chlorinated hydrocarbons will be through inhalation and dermal contact.

Residential wells

Ground water used for drinking represents a future exposure pathway for people using residential wells that are pumped from 300-500 feet aquifer. In the area of north Baton Rouge, specifically Baker, Scotlandville and Zachary the upper sands are not used for public water supply. Potable water is pumped from the "2000 foot aquifer". Contamination migration to this aquifer is reduced by the presence of clay layers. There is no restriction on using the 400 feet aquifer, therefore, an individual could purchase a location near the Brooklawn or Scenic area and install a well at any depth, thus causing a future exposure pathway through ingestion and dermal contact with water from these wells.

More information on the number of residential wells, their exact depth, and location and distance from the site is needed to be able to characterize the future migration of contamination to these wells.

PUBLIC HEALTH IMPLICATIONS

Toxicological Evaluation

Introduction

In this section we shall discuss the health effects in persons exposed to specific contaminants, evaluate state and local health databases, and address specific community health concerns. To evaluate health effects, Maximum Concentration Levels (MCL) developed for each route of exposure (such as ingestion or inhalation) and the type of health effects were used. For non carcinogens the Reference Dose was used whenever it was available. The Reference Dose is an estimate of the daily level of human exposure that is likely to be without an appreciable risk of deleterious effects during a portion of a person life time. For

carcinogenic effects a risk assessment model with Carcinogenic Potency Factor (CPF) from EPA's IRIS database file was used. For consumption of fish the acceptable risk of 1E-4 used by the Louisiana State Agencies for issuing fish advisories was used. Consumption assumptions used for an adult were 23 cubic meters (m^3) of air breathed per day, 2L of drinking water per day, ingestion of 100 mg of soil per day and consumption of 30g of fish per day (one fish meal of half a pound per week).

The population at risk of exposure to contaminated air are workers. OSHA Permissible Exposure Limits (PELs) were used to evaluate this risk. They are designed to assure that, to the extent feasible, no employee suffers impairment of health or functional capacity even if he is regularly exposed to a toxic material for the period of his working life. If OSHA PEL were not available, NIOSH Recommended Exposure Limits (REL) were used. These levels were used only when dealing with workers' exposure, they would not apply to the general population.

Presently the chemicals exceeding MCLs are:

(1) Volatile chlorinated hydrocarbons such as carbon tetrachloride, 1,2 dichloroethane, trichloroethylene, 1,1,2 trichloroethane, 1,1,2,2, tetrachloroethane, hexachlroroethane, tetrachloroéthylene, hexachlorobutadiene.
(2) Chlorinated aromatic hydrocarbons: hexachlorobenzene.
(3) Lead

Toxicological data were reviewed to determine any adverse health outcomes that may result from exposure to the PPI site related to contaminants of concerns.

Volatile chlorinated hydrocarbons

Volatile chlorinated hydrocarbons were widespread at both the Brooklawn and Scenic area. They were found in all environmental media. Exposure of workers on the site may have occurred through inhalation, ingestion of dust particles and dermal contact. The highest concentration in air samples on-site were in excess of the OSHA, NIOSH or ACGIH limits only during remediation activities therefore during short periods of time. Exceedances are presented in (Table 1.3) . At these levels of exposures over brief periods of time, the only expected health effects would be minimal central nervous system effects such as dizziness and headache. Off-site chronic exposures above the TLV for chemical mixtures of concern do not appear to be occurring; continuous air monitoring is taking place during excavation or soil disturbances. Residents around the site would only be exposed during emergency situations.

Mild irritation to unprotected skin could occur. Soil contamination does exceed the MCL calculated from the Reference Dose in numerous instances. Long-term ingestion of dust on-site at these levels would be expected to increase cancer risks. An exposure pathway could only be completed for workers with poor hygienic practices. Soil concentrations of contaminants close to residences located far away would be much lower than concentrations on-site and therefore would not be expected to cause adverse health effects.

The drinking water is not contaminated so none of the residents are thought to have suffered health effects from drinking contaminated water. However, VOC's are present in the shallow monitoring wells and there is a definite threat for the 400' aquifer used for industrial purposes.

Hexachlorobutadiene (HCBD) has been found in all environmental media: soil, ground water, fish, and air. HCBD was the primary chemical for air contamination during remediation (average concentration was 0.104 ppm, PEL 0.02 ppm from ACGIH). HCBD is considered to have a low order of acute toxicity, at these levels minor central nervous system (CNS) symptoms would be expected among workers exposed for brief periods of time. HCBD is persistent in the environment because it rapidly binds to soil. No health effects would be expected from the present levels of soil contamination. Since HCBD bioaccumulates in organisms, a concern would be its carcinogenic potential. The main toxicological effect that could result from exposure to HCBD would be an increased risk of cancer for the population consuming high quantities of fish from the area.

Chlorinated aromatic hydrocarbons: hexachlorobenzene.

Hexachlorobenzene (HCB) has also been found in most environmental media. HCB is persistent in the environment because it rapidly binds to soil. No health effects would be expected from the present levels of soil contamination. HCB bioaccumulates in organisms and a concern would be its carcinogenic potential. It is a probable carcinogen (Class B) with a low carcinogenic potency factor. The main toxicological effect that could result from exposure to HCB would be an increased risk of cancer for the population consuming high quantities of fish from the area.

Lead

Lead was the major inorganic contaminant in the Brooklawn area. It was present in soil, sediment and ground water at levels higher than background levels. Lead binds strongly to soil and sediments. Lead particulates are available for transport from soil as fugitive dusts. Lead enters the body by ingestion of lead-containing-dust. Fugitive dusts migrating from the site could contribute to minor

elevated blood lead levels for the surrounding population. Groundwater exhibits a level of 54 ppm which would be unacceptable, if it would reach the drinking water aquifer.

Health Outcome Data Evaluation

The health outcome data evaluated are possible adverse health effects due to exposures to site-related contaminants or health concerns of local residents. Based on the toxicologic evaluation, the health outcomes to be reviewed are cancer, and skin disorders. The main community concerns were directed towards exposure pathways, remediation plans, evacuation and cancer.

Based on the data available, human exposure could have occurred during the entire period of operation of the site from approximately 1962, and continued until 1987 or beyond. Thus, the time period for cancers to occur would include the period beginning 15 years following initial exposure and onset of disease and extending 15 or more years beyond activities linked to exposure.

Incidence rates for Alsen were calculated and all East Baton Rouge Parish. Population figures for 1980 were obtained for all 65 census tracts within East Baton Rouge Parish and all 31 zip code delivery zones within these census tracts. The most current population figures available for the area are 1980 census data.

The site population was defined as areas within the zip code delivery zones 70807 and 70714 and within the census tract (42.03). Both criterion were met in order to be included in the site population. By operationally defining the site population as such, the evaluation of data coded by census tract and/or zip code zones could be accomplished. Additionally, data could be evaluated for a smaller and more accurate site population because populations geographically distant from the site but within zip code delivery zones could be eliminated.

East Baton Rouge Parish was used as a comparison population to evaluate if differences in disease rates existed in the site population. East Baton Rouge Parish is a valid comparison population, because it includes the site population and is also reflective of the geographic region of that population. Data for the site and comparison population were gathered in a similar manner which allows for comparability of the populations.

The health source used to evaluate possible health outcomes was cancer incidence data. Diagnosed cases of cancers by anatomic site and age in the town of Alsen, (census tract 42.03) and East Baton Rouge Parish, were obtained from the Louisiana Tumor Registry from

1983 to 1987. Cancer incidence data for Alsen is not available before 1983. The following cancer site statistics were examined for statistical significance based on toxicological implications and community concerns:

- Cancers of the trachea, bronchus and lung; International Classification of Disease (ICD) codes 162.0, 162.2 -162.9
- Cancers of the urinary system: bladder, kidney, renal pelvis, ureter and other urinary organs; ICD codes 188.0 - 189.9
- Cancer of the liver, gallbladder and bile duct; ICD code 155.0, 156.0, 156.1, 156.9
- Malignant melanoma; ICD code 172
- All-sites cancers
- Leukemia

Descriptive data for Alsen community and East Baton Rouge Parish are presented in Tables (4-9). For each age groups the number of observed cases, the population and the case rates per 100,000 are presented. These are age specific rates. Using the rates from East Baton Rouge as references, the expected number of cases in Alsen was calculated. The last column presents the ratio of observed cases in Alsen over the expected number of cases. A ratio lower than 1, shows that Alsen had less cases than expected, conversely a ratio higher than 1 shows that Alsen has more cases than expected. The Standardized Morbidity Ratios (SMR) are the ratio of the total observed cases over total number of expected cases. The Chi Square was calculated to test for significance of the SMR. A p-value lower than 0.05 shows that there is a very low probability that the difference observed would be due to chance alone.

The number of lung cancer cases observed in Alsen was much lower than the number expected (a ratio of 0.27). This was true among all age groups. Cancer of the liver and gallbladder observed in Alsen were also lower than expected (a ratio of 0.65). The number of observed cases of leukemia was 1 and the expected number was 0.16. With such small populations, these differences have little meaning, the difference may be due to chance alone. Urinary tract cancers were higher than expected, 3 cases compared with 2.09; cancers from other sites were 7 compared with 5.5 cases expected. These differences were not significant, meaning they could have been due to chance alone. For all cancers combined (Table 9) the rates observed in Alsen are about half of those observed in Alsen.

The principal limitation inherent with this type of descriptive evaluation is the lack of adjustment for all established risk factors and the small number of cases observed or expected in a small population. More information would be necessary to produce a more precise risk profile for cancer in this area.

Exposure to the volatile chlorinated hydrocarbons and aromatic hydrocarbons at high concentrations, may have caused acute health problems such as headaches and other nervous system effects (dizziness, weakness, vertigo, irritability, depression or confusion), skin disorders and respiratory tract irritations. The population at highest risk for these effects is the workers on the site. Although these were possible outcomes, due to a lack of data, it is difficult to draw valid conclusions regarding the occurrence and frequency of these types of effects.

The possible effects resulting from a high exposure to lead, a metal found on-site, include: premature birth, miscarriages, low birth weight, stillbirths and impairment of CNS development in children. The lead levels found on-site are not believed to be at high enough concentrations to cause any of the above mentioned health effects. Due to a lack of data on most of these effects, statistics have been calculated only for stillbirths for the period 1982-1988 for Louisiana and East Baton Rouge Parish (See Table 10). There are no major differences between the rates observed in East Baton Rouge and Louisiana.

Community Health Concerns Evaluation

Responses to community health concerns shall be prepared prior to release for public comment.

CONCLUSIONS

Based on the information provided and reviewed by the Louisiana Office of Public Health, it is concluded that, Petroprocessor is a public health hazard as a result of past, present and future exposure to volatile chlorinated hydrocarbons, chlorinated aromatic hydrocarbons and inorganics.

The contaminants are present in all environmental media including soil, sediment, surface water, air, and fish.

Human exposure to the these chemicals may occur via ingestion, inhalation, and dermal contact with soil, sediment and surface water, inhalation of air and ingestion of fish. The population at highest risk of exposure are workers remediating the site who do not follow the Health and Safety plan designed for their protection and workers in the industrial plants nearby the site. Petroprocessor does not present an immediate health threat to the community surrounding the site as long as citizens: (1) do not trespass onto the site, and (2) adhere to the advisory against swimming and fishing in Devil's Swamp Lake.

Ingestion of ground water represent a future exposure pathways since the PPI site is overlying the "400-foot" aquifer which is used for industrial and private purposes. There is a threat of future contamination, since information about lateral and vertical extent of ground water contamination has not been determined and since there has been no survey of abandoned wells or survey of ground water flow characteristics. Therefore, the 400 foot aquifer presents a potential future route of exposure pathway through ingestion and dermal contact. Off-site contamination at Scenic site and Bayou Baton Rouge has not been fully characterized. Further sampling of environmental media at these locations is required in order to assess the total risk of human exposure.

An evaluation of the health outcome data did not demonstrate a significant difference between the community of Alsen and the comparison populations. Cancer and stillbirth rates were not elevated. However, these results do not eliminate the possibility that a few individuals could have suffered adverse health effects from exposure to site contaminants since statistical significance of health outcome is generally not achieved when only a few cases occur in a population.

RECOMMENDATIONS

1. The site should continue to be secured and the public should be educated not to trespass onto the site. Warning signs identifying Petroprocessor as a hazardous waste site should be more visible. Signs posting no swimming and fishing in Devil's Swamp lake should be increased and placed evenly and visibly throughout the area.

2. The migration of the contaminated plume in the ground water should be characterized and evaluated. The residential and industrial uses of ground water should be identified and characterized with respect to hydrogeologic factors and exposure pathways. In addition, geologic data from areas below the surface of the site is needed to define the local impact of any subsurface contamination on the regional aquifers. A survey must be conducted to determine the exact number of residential well, their depth and distance from the site.

3. Workers should continue to adhere to the existing safety plan in accordance with applicable Occupational Safety and Health Administration regulations.

4. Further sampling of all environmental media should be conducted at the Scenic area in order to assess the extent of contamination and migration.

5. Measures should be taken to prevent further erosion of the Scenic area bluff by Bayou Baton Rouge.

6. Air should be monitored during excavation and other soil disturbances of the site in order to ensure there are no off-site releases of volatile chlorinated hydrocarbons compounds and contaminated dust.

7. An emergency evacuation plan, which avoids crossing the existing railroad track, should be developed for residents within a two miles radius of the site.

8. The public should be educated to the fact that fish sampled in Devil's Swamp lake are contaminated with HCB and HCBD.

9. Additional fish sampling should be conducted to monitor levels of HCB and HCBD. Sampling of other biota such as shellfish, deer and turkeys is highly recommended since the area is used for hunting as well as fishing.

10. The advisory against fish consumption in Devil's Swamp lake should be reevaluated when further sampling results are available.

Health Activities Recommendation Panel

In accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended, the data and information developed in the Petroprocessor health assessment have been evaluated by the Health Activities Recommendation Panel (HARP) for appropriate follow up health activities. The HARP concluded that:

1. A follow up public meeting is to be held by LOPH to explain to the community the results of this public health assessment.

2. A health professional education program is proposed to advise public health professional and the local medical community of the nature and possible consequences of exposure to contaminants at the PPI site.

3. A community health education program is to be conducted by LOPH to advise the community of that area about the contamination of Devil's swamp, and the nature and possible consequences of exposure to contaminants at the PPI site.

TABLE 2.2
Petroprocessors of Louisiana, Inc
Scenic Site
On-site Contamination

Compounds	Air (ppm)	Comparison values (ppm)
Carbontetrachloride	<.1	2 (NIOSH) *
Chloroform	<.1	2 (NIOSH)
Vinyl chloride	<.25	5 (NIOSH)
1,2 dichloroethane	<.1-0.65	None
1,1,2 trichloroethane	<.1	10 (NIOSH)
1,1,2,2,tetrachloro/ ethane	<.1-1.02	1 (NIOSH)
Trichloroethylene	<.1	100 (NIOSH)
Tetrachloroethylene	<.1	50
1,2 dichloropropane	<.1-.27	75 (NIOSH)
Hexachlorodutadiene	<.001-2.17	0.02 ACGIH **
Benzene	<.1	10 (NIOSH)
Ethylbenzene	<.1	100 (NIOSH)
Pentachlorobenzene	NA	None
Hexachlorobenzene	<.001	None
Toluene	<.1	100 (NIOSH)
Naphthalene	<0.25	10 (NIOSH)

* NIOSH (National Institute of Occupational Safety and Health) standards were used because the workers on-site are the most exposed population during excavation.

** ACGIH (American Conference of Governmental Industrial Hygienist)

NA Not Analyzed

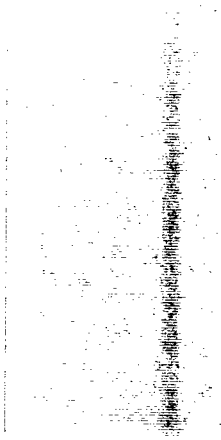
TABLE 2.1*
Petroprocessors of Louisiana, Inc
Scenic Site
On-site Contaminants*

Compounds	Soil (ppm)	Soil Concent. from RFD (ppm)
Carbontetrachloride	ND-1,200	490
Chloroform	<.001-200	7000
Vinyl chloride	<.01-570	14 EMEG
1,2 dichloroethane	.01-2,800	7.7 CREG
1,1,2 trichloroethane	ND-5.8	2800
1,1,2,2,tetrachloro/ ethane	<.01-34	3.5 CREG
Trichloroethylene	0.02-730	None
Tetrachloroethylene	0.13-970	7000
Hexachlorodutadiene	0.02-9,400	1400
1,2 dichloropropane	0.04-1,200	63000 EMEG
Benzene	ND-38	24 CREG
Ethylbenzene	<10-83	70,000
Pentachlorobenzene	5.5-137	560
Hexachlorobenzene	<0.2-1,400	560
Toluene	ND-13	140,000
Naphthalene	ND-100	None

* Contaminants were detected at surface soil to a depth of 25 feet.

ND Not Detected

REFERENCE 7



An EPA Update on Activities at the Petro Processors Inc. Superfund Site February 1991

PETRO PROCESSORS INC. SITE UPDATE

EPA Answers Questions Commonly Asked About the PPI Sites

INTRODUCTION

Under provisions of the federal Superfund program, the U.S. Environmental Protection Agency (EPA), the Louisiana Department of Environmental Quality (LDEQ), and the potentially responsible parties (the individuals and companies responsible for the contamination problems at the site) are working to correct complex and extensive contamination problems at the Petro Processors, Inc. (PPI) Superfund site in East Baton Rouge Parish near Alsen, Louisiana. The site consists of two locations; the Brooklawn site near Devil's Swamp and the smaller Scenic Highway site. Both locations are adjacent to Bayou Baton Rouge (see Figure 1).

Since the remedial action began at the site, area residents have asked EPA numerous questions about the site and the decision-making process. Last summer, EPA held an open house in Baton Rouge to answer some of these questions. EPA has prepared this update to answer many of the most commonly asked questions. These questions range from general site information to health effects to waste removal and containment. Also included in this update is a review of site activities and a glossary of technical terms; words in boldface throughout this update are defined in the glossary. EPA is committed to providing factual and up-to-date information about the site to area residents and encourages residents to visit the public information repositories and to call when additional questions arise. The addresses and phone numbers of information contacts is included on the back page of this update.

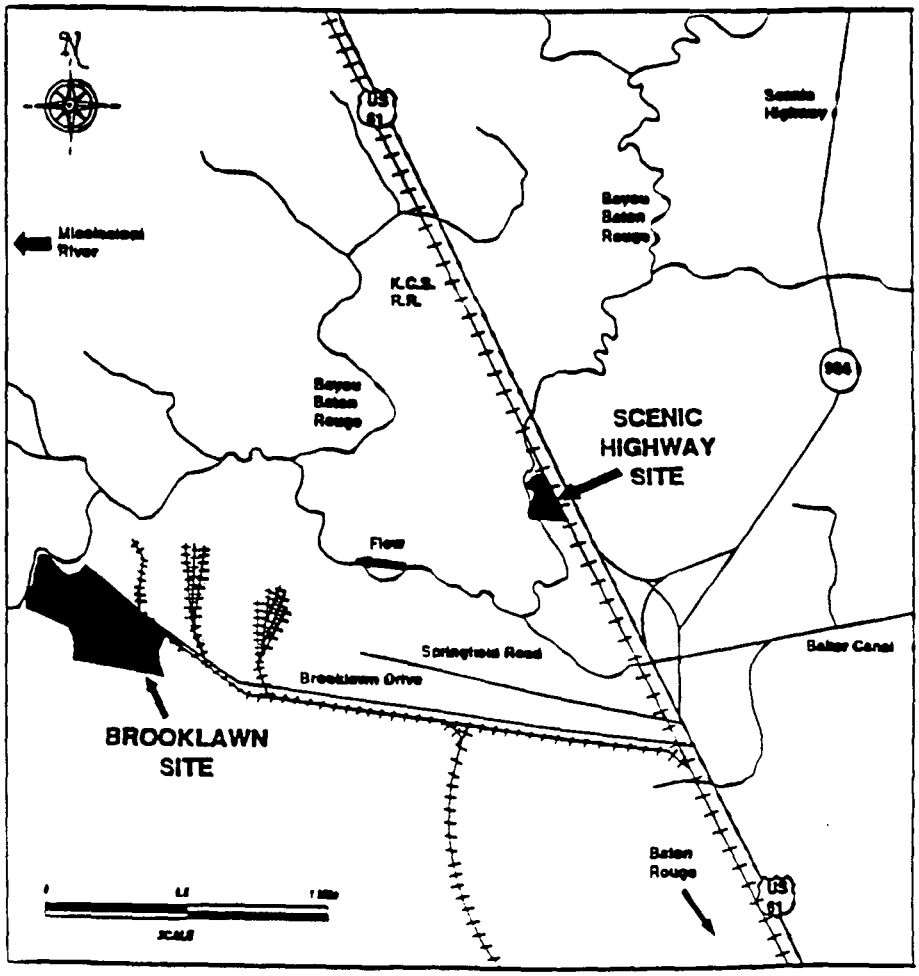


Figure 1: Site Location Map

Hunting and Fishing: The area south of the site, known as Devil's Swamp, has been used in the past for recreational hunting and fishing. There are portions of Devil's Swamp that have been contaminated by the PPI sites. During recent waste consolidation activities in Bayou Baton Rouge, EPA and NPC discovered that contamination had moved deeper into the bayou than what was expected. When the problem was found, NPC agreed to conduct a study to further define the extent of contamination in the bayou and the surrounding area. NPC submitted a work plan to EPA and the Louisiana Department of Environmental Quality (LDEQ) for review and approval. EPA has reviewed the work plan and provided comments to NPC. The plan has not yet been approved.

The contaminated areas are being cleaned up by the potentially responsible parties (PRPs) in accordance with the Consent Decree. The Consent Decree is an agreement between EPA and the PRPs that describes the specific actions that the PRPs will undertake at the site. Depending upon the type of technology selected to clean up the contaminated areas in Devil's Swamp, there could be a short-term negative impact on the swamp. However, with the use of appropriate techniques, the impact of remedial activities on the swamp can be reduced.

Why has LDEQ not initiated the study of Devil's Swamp?

LDEQ has stated that NPC will not allow access to the site unless certain procedures are followed. At this time, LDEQ does not agree that the procedures outlined by NPC are necessary to conduct the sampling. LDEQ also has been unable to pursue access through normal legal channels.

What is the likelihood that the Mississippi River will change course and cut through the site before the remedial action is completed?

The U.S. Army Corps of Engineers is responsible for maintaining the course of the Mississippi River. The Mississippi River is currently about 4,000 feet southwest of the site and has historically deposited alluvial sediments between the site and the river. Although EPA cannot make an accurate prediction concerning the future course of the Mississippi River, the above information indicates that the river will likely not change course and cut through the site.

Health Concerns:

Do you know how many people are likely to be affected by an adverse accident in your operation, their approximate location, and when these people would be expected to be there?

Yes. The group with the highest risk of being affected by an accident at the site includes industrial workers at the neighboring plants operated by Reynolds Metals Company and Schuylkill Metals Company. According to the Agency for Toxic Substances and Disease Registry (ATSDR), these plants combined employ approximately 200 people. Both industrial facilities typically operate 24 hours per day.

Another group that could be affected includes the individuals living directly across Scenic Highway from the Scenic site. Appropriate air emission action levels have been built into the Health and Safety Plan to guard against their potential exposure from contamination at the site.

Residents of Springfield Road also have been considered in planning the remedial action. EPA has performed some dispersion modeling which shows that the residents of Springfield Road are too far away to be affected by air emissions from the site. Nevertheless, Springfield Road residents will be notified when waste-handling activities at the Scenic site will occur.

One of the main reasons for selecting the current remedy is that it reduces the handling of solid waste at the site. By reducing how much the waste is handled, that is how much it is moved, the chance of an adverse accident is also reduced. However, some handling of waste has occurred, and will continue to occur, at the site. There is a Health and Safety Plan for the site which was developed by NPC Services, the contractor in charge of operations at the site. This plan contains numerous procedures to monitor the air during site operations and air emission action levels to guard against the occurrence of an accident at the site. There also is an air emission response plan developed

(Continued on page 4

COMPOUND	CONCENTRATION IN PPM (MG/KG)	POSSIBLE HEALTH EFFECTS
Hexachloroethane	2,260	Causes eye irritation, light sensitivity; causes moderate irritation of the skin, mucous membranes, and liver; causes central nervous system depression, narcosis, shortness of breath, and liver and kidney damage.
Methylene Chloride	BDL - 46	Causes fatigue, weakness, sleepiness, light-headedness, numbness to limbs, nausea, and eye and skin irritation.
Naphthalene	BDL - 1,800	Causes eye irritation, headaches, confusion, excitement, malaise, nausea, vomiting, abdominal pain, irritated bladder, profuse sweating, jaundice, renal shutdown, and dermatitis.
Phenanthrene	BDL - 476	Poison by intravenous route; moderately toxic by ingestion; tumorigen by skin contact in laboratory animals; a human skin photosensitizer; may cause mutations in humans.
Pyrene	BDL - 623	Poison by inhalation; moderately toxic by ingestion; an experimental tumorigen; a skin irritant; human mutagenic data.
1,1,2,2-Tetrachloroethane	BDL - 22,800	Causes nausea, vomiting, abdominal pains, tremor in fingers, jaundice, enlargement and tenderness of the liver, dermatitis, monocytosis, kidney damage, partial loss of muscular power, and weakness of limbs.
Tetrachloroethene	BDL - 664	Causes nausea, vomiting, abdominal pains, tremor in fingers, jaundice, enlargement and tenderness of the liver, dermatitis, monocytosis, kidney damage, partial loss of muscular power, and weakness of limbs.
Toluene	BDL - 399	Causes fatigue, weakness, confusion, euphoria, dizziness, headaches, dilated pupils, nervousness, muscle fatigue, insomnia, paresthesia, dermatitis, and photophobia.
1,2,4-Trichlorobenzene (TCB)	BDL - 143	Causes irritation of the eyes, skin, and mucous membranes; causes skin burns, drowsiness, incoordination, unconsciousness, liver, and lung and kidney damage.
1,1,1-Trichloroethane	BDL - 27	Causes headaches, central nervous system depression, eye irritation, dermatitis, and cardiac arrythmia.
1,1,2-Trichloroethane	BDL - 50,840	Causes headaches, central nervous system depression, eye irritation, dermatitis, and irregular heart beat.
Trichloroethene	BDL - 1,740	Causes headaches, vertigo, eye irritation, visual disturbance, nausea, and vomiting, eye irritation; dermatitis, irregular heart beat and paresthesia; a carcinogen.
Vinyl Chloride	BDL - 3	Causes weakness, abdominal pains, gastrointestinal bleeding, blood clots, and paleness of extremities; a carcinogen.
Total Xylene	BDL - 47	Causes dizziness, drowsiness, excitement, nausea, dermatitis; also causes irritation of eyes, nose, and throat; a carcinogen.

Source: Health effects data have been condensed from four informational sources: Sax's Dangerous Properties of Industrial Materials, 7th edition; Hawley's Condensed Chemical Dictionary; National Institute of Occupational Safety and Health's (NIOSH) Pocket Guide to Chemical Hazards; and Material Data Safety Sheets.

(continued from page 5)

been, and will continue to be, available for review at the information repository.

What species of fish and wildlife have been sampled for chemical contamination? Where were the samples taken and when? What impact had been made on the organs?

From the fall of 1986 through the spring of 1987, the LDEQ analyzed a series of fish samples from Devil's Swamp Lake for residues of observed chemicals in edible tissues (fillets). The tissue results indicated that the levels of hexachlorobenzene (HCB) and hexachlorobutadiene (HCBD) exceeded the guidelines of the Louisiana Department of Health and Human Resources and LDEQ in assessing seafood contamination. This guidance is 0.060 ppm for either HCB or HCBD, applicable only to edible tissues. The HCB levels ranged from 0.0 to 0.122 ppm, and the HCBD levels ranged from 0.0 to 0.270 ppm. Due to this study and earlier sediment screening from the Devil's Swamp Lake and tributary sloughs and bayous indicating the presence of HCB and HCBD, the Louisiana Water Pollution Control Division posted the lake with signs advising the public against swimming in, or taking and consuming of fish and other aquatic organisms from, the lake.

Waste Removal and Containment:

Are you planning to remove any waste from this site (extraction wells)? If so, how will it be transported, what route will it travel, where will it be transported, and what will happen to it when it reaches its destination?

(continued on page 9

REFERENCE 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

May 3, 1993

Ms. Mary Snyder
Food & Drug Administration
Program Enforcement Branch
200 C Street Southwest
Washington, D.C. 20204

Dear Ms. Snyder:

This letter is intended to apprise you of a potentially serious problem near Scotlandville, East Baton Rouge Parish, about ten miles north of the City of Baton Rouge, in the state of Louisiana. While conducting an investigation of possible contamination in a wetlands area adjacent to the Mississippi River, the Environmental Protection Agency (EPA) has been informed of commercial fishing (crawfish and other fish) in the area of concern. The "area of concern" includes Bayou Baton Rouge, Devil's Swamp, and Devil's Swamp Lake.

EPA has documentation that crawfish and other fish are being collected for market sale (some 500 pounds daily) from the area of concern. We do not know if the market is restricted to the State of Louisiana. Preliminary data results for the wet sediments in Devil's Swamp include the following: polychlorinated biphenyls (PCBs) in excess of 6,400 parts per billion (ppb); hexachlorobenzene (HCB) and hexachlorobutadiene (HCBD) in excess of 470 parts per million (ppm) and 10,000 ppm, respectively. In addition, mercury detected in the surface water ranges from 33 to 107 ppb.

Although a final report is not due for review by EPA until this fall, I felt that this preliminary data should be passed along to your agency now so that any appropriate action could be initiated as soon as possible. A health advisory (HCB and HCBD based) does exist for Devil's Swamp Lake warning against consumption of fish and shellfish by the general population. This advisory does not appear to be effective; no health advisory exists for Devil's Swamp or Bayou Baton Rouge. I am prepared to assist you in whatever endeavors you need to pursue at this or any future time in order to alleviate the concern of commercial harvesting of crawfish/fish from Devil's Swamp and Devil's Swamp Lake.

Printed on Recycled Paper

Some toxicological tests have been conducted by a company managing an adjacent Superfund Site, the Petro-Processor Site, and that information has already been given to the Louisiana Department of Environmental Quality (LDEQ) and the Louisiana State Department of Health & Hospitals (LDHH). Although EPA has not played a role in the meetings between the State and the company which conducted the testing (EPA did not approve the Work Plan for the "Eco-Risk Assessment" implemented), I believe that this data merely confirms that the area has been impacted. My counterpart at LDEQ is Mr. Thomas Stafford and he can be reached at (504)765-0487. If I can be of further assistance, please do not hesitate to contact me at (214)655-6772.

Sincerely,

original signed by

Cynthia J. Kaleri
Remedial Project Manager (6H-EA)

cc: Ron Gougust (NOAA CRC)
Paul Conzelman (US F&W)
George Pettigrew (ATSDR)
Tom Stafford (LDEQ, Petro Site RPM)
Dr. Sandra Robinson (LDHH)

Pam Phillips (EPA Regional Counsel)
Bob Bolger (NPC, Petro Site)
Honorable Frank J. Polozola (US Middle District Court)
Dr. Edward McLaughlin (LSU - Court Appointed Expert)
Wilma Subra (TAG Advisor, Petro Site)

bcc: David Charters (EPA ERT - Edison)
Jon Rauscher (6H-SR)
Susan Roddy (6H-SR)
✓Jeff Ayers (PRC)
John Jones (6H-M)

REFERENCE 9

The Advocate, Baton Rouge, La. Thurs. July 15, 1993

DEPARTMENT OF HEALTH AND HOSPITALS
DEPARTMENT OF ENVIRONMENTAL QUALITY

HEALTH ADVISORY FOR THE DEVIL'S SWAMP AND BAYOU BATON ROUGE AREA

July 9, 1993

The Louisiana Department of Health and Hospitals and the Louisiana Department of Environmental Quality are issuing the following health advisory for the Devil's Swamp and Bayou Baton Rouge areas of East Baton Rouge Parish. The area of concern is bounded on the north by Hall Buck Marine Road, on the east by the bluffs and the Baton Rouge Barge Harbor and on the South and west by the Mississippi River.

This advisory modifies a previous advisory in response to recent sampling and analysis of environmental data.

Water and sediment sampling and analyses south of the Petro Processors Superfund site indicate arsenic, lead, mercury, hexachlorobenzene (HCB) and hexachlorobutadiene (HCBD) contamination is present at levels that pose risks to public health. Therefore, the public is advised not to swim nor participate in other primary water contact sports in the area of concern.

Additionally, elevated levels of HCB, HCBD, and mercury have been found in some samples of fish from this area. Because of the levels of contamination, the agencies are advising that consumption of all fish species from these waters be limited to two (2) meals per month. A meal is considered to be one-half (1/2) pound of fish. Recommendations made in this advisory have taken into account individuals with special sensitivities such as children and pregnant women.

This advisory is based on samples taken from both Devil's Swamp and Bayou Baton Rouge. However, the area of concern extends beyond the sampled area. When additional data become available, the boundaries of the advisory will be adjusted, if necessary, to reflect the results of the new information.

High consumption of food contaminated with these chemical residues over a long period of time may increase the risk of cancer or other diseases. The chemicals are usually more concentrated in the fat and skin.

To reduce the risk of exposure to these chemical contaminants, you should trim the fat and skin from fish prior to cooking; bake, broil or grill, and then drain the fat; vary your diet by eating a variety of fish, seafood, meat and poultry from different sources.

For more information regarding this advisory, contact Emelise Cormier, DEQ-Water Resources at 504-765-0634. Tom Stafford, DEQ-Inactive and Abandoned Sites at 504-765-0487, or Jennifer Goodwin, DHH-Office of Public Health, 504-568-8537.

Larry Hebert, M.D.
Assistant Secretary and State Health Officer - Dept. of Health and Hospitals

Dale Givens
Assistant Secretary - Dept. of Environmental Quality

21935-jul 15-1t

REFERENCE 10

SOIL SURVEY

East Baton Rouge Parish
Louisiana

Please return to
Library of PRC-EMI
Baton Rouge, LA

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
LOUISIANA AGRICULTURAL EXPERIMENT STATION

Issued September 1968

[redacted]ore suitable for woodland, wildlife, or recreation [redacted]or cultivated crops.

. *Olivier-Loring association*

Nearly level to gently sloping, somewhat poorly drained nd moderately well drained, loamy soils on ridges and n broad valleys

This association consists of nearly level to gently sloping idges and low, mostly broad valleys in the northern part f the parish. The elevation ranges from 110 to 135 feet on he ridges and from 70 to 90 feet in the valleys.

This association makes up about 7 percent of the parish. About 50 percent is Olivier soils, and 35 percent is Loring oils. Somewhat less than 15 percent consists of Calhoun, Zachary, Frost, and Jeanerette soils, and less than 1 percent is Memphis soils.

The somewhat poorly drained, nearly level Olivier soils are on broad ridgetops, foot slopes, and smooth side slopes. These soils have a surface layer of grayish-brown, friable silt loam and a subsoil of yellowish-brown, friable silty clay loam mottled with gray. A slowly permeable fragipan occurs below a depth of about 16 to 20 inches. The moderately well drained Loring soils occur on the ridges and nearly level to gently sloping side slopes. They have a brown silt loam surface layer and a brown silty clay loam subsoil. A fragipan occurs below a depth of 20 to 24 inches.

Calhoun, Zachary, Frost, and Jeanerette soils, which are mainly poorly drained, acid, gray silt loams, are in the valleys between ridges. These valleys form natural drainageways. Most of the streams are shallow and intermittent.

[redacted]phis soils are well drained and occur on the ridges [redacted]n the Loring soils, but do not have a fragipan.

Most farms in this association contain several hundred acres. There are several large dairies and large herds of beef cattle. The soils are low in fertility but, if limed and fertilized, are productive of most crops and pasture plants. They hold moisture fairly well. Sloping areas that are cultivated and left unprotected are subject to erosion. The poorly drained soils in the valleys, large areas of which are subject to occasional floods, are not well suited to cultivated crops, but they are good for pasture if they are drained, limed, and fertilized. Oats and ryegrass are grown for winter grazing. Several pecan orchards are in this association, and some sweetpotatoes are grown.

6. *Olivier-Providence association*

Nearly level to gently sloping, somewhat poorly drained and moderately well drained, loamy soils on ridges that have long side slopes

This association is along the northeastern border of the parish. It consists of gently convex ridges, most of which have long, nearly level side slopes and foot slopes. Some of the ridgetops are broad and nearly level. Numerous shallow, intermittent streams have cut through the ridges and flow through narrow valleys. The ridges are 15 to 25 feet above the valleys and about 40 feet above the flood plains, at an elevation of 120 to 135 feet.

This association makes up about 4 percent of the parish. About 45 percent is Olivier soils, 40 percent is Providence [redacted], and 15 percent consists of Calhoun, Cascilla, and [redacted]verly soils.

Olivier soils are on broad ridgetops, smooth side slopes, and foot slopes. Providence soils are on uneven slopes, slightly steeper side slopes, and gently convex ridgetops. Both the Olivier and Providence soils have a silt loam surface layer, a friable silty clay loam subsoil, and a slowly permeable fragipan below a depth of 16 to 24 inches. The subsoil of the Olivier soils is mottled yellowish brown and gray, and that of the Providence soils is brown or yellowish red. Providence soils are underlain by loam, clay loam, or sandy clay loam below a depth of 30 to 36 inches. Calhoun soils are on terraces of the broader valleys, Cascilla soils are near the larger streams, and Waverly soils are on the nearly level flood plains and along the smaller, more sluggish streams.

Most farms in this association contain several hundred acres. There are a few dairies, but the main sources of income are beef cattle and timber products. About half the association is in forest consisting of loblolly pine and mixed hardwoods. The rest is mainly in hay and volunteer grass pasture. A few fields are used for corn, oats, garden crops, and supplemental oats and ryegrass pasture. Most of the woodland is grazed, but the forage is scanty and of poor quality.

7. *Olivier-Loring-Terrace escarpments association*

Level to gently sloping, somewhat poorly drained and moderately well drained, loamy soils and steep escarpments

This association consists of slightly dissected to highly dissected, level to gently sloping areas and steep escarpments. It occurs in an irregular belt that begins in the northwestern part of the parish, extends southward, and crosses the southern third. Much of the acreage is level or nearly level, but areas along drainageways have a slope range of 1 to 3 percent or more. The most striking feature is a steep escarpment that rises abruptly from the flood plain of the Mississippi River to the level and nearly level areas of loesslike soils.

This association makes up about 11 percent of the parish. About 47 percent is Olivier soils, 23 percent is Loring soils, and 22 percent consists of Terrace escarpments. The rest consists of Memphis, Springfield, and Calhoun soils.

All of these soils have a silt loam surface layer and a silty clay loam subsoil. Olivier soils are nearly level and somewhat poorly drained. They have a mottled gray and yellowish-brown subsoil and a fragipan below a depth of 16 to 24 inches. Loring soils, which are moderately well drained and nearly level, are along drainageways and on a few of the steeper, short slopes. They have a brown subsoil and a fragipan at a depth of 18 to 24 inches. Memphis soils occur with the Loring soils, and Springfield soils with the Olivier soils. Small to medium-sized areas of Calhoun soils are on broad flats.

About 30 percent of this association is used for pasture, 20 percent has been developed for urban use, 10 percent is cultivated, and 40 percent is in forest consisting of mixed hardwoods and pines. Much of the acreage is suitable for homesites, and the present trend is toward residential use. Many of the farms contain less than 20 acres, but a few contain several hundred acres. The raising of beef cattle is the major enterprise on farms, but dairying also is important. There are a few pecan orchards between 2 and 10 acres in size. Except for the escarpments, this association is fairly well suited to cultivated crops and pasture plants.

College Hills, 60 feet at Baton Rouge, 65 feet at Central, 70 feet at Baker, and 90 to 100 feet at Port Hudson. There is a southeasterly slope of 2.5 to 1.5 feet per mile.

Gently sloping, silt mantled areas of the Montgomery formation occur mainly as a series of ridges along the northern border of the parish. They are dissected in places by both broad and narrow valleys of the Prairie formation. The ridges are 20 to 40 feet above these valleys. The elevation is 100 to 130 feet at Plains in the northwestern part of the parish, 125 feet at the parish line north of Zachary, 125 feet at Chaneyville School, and 140 feet in the northeastern part of the parish. There is a southeasterly slope of about 8 feet per mile.

The overall drainage pattern of the parish is toward the southeast. The Comite River drains the north-central and northwestern parts, the Amite River drains the eastern part, and Bayou Manchac drains the southern part. Minor tributaries of the Mississippi River drain a small acreage in the northwestern part of the parish.

Agriculture

According to the U.S. Census of Agriculture, the total number of farms decreased from 1,704 in 1954 to 1,085 in 1964, and the average size of farms increased from 80 acres to 140.4 acres in the same period. The percentage of farmland used for crops decreased from about 30 percent in 1944 to 11 percent in 1964.

At the present time, more of the acreage is in pasture, hay, and feed crops than in cultivated crops. In 1964, cotton was grown on 94 acres, corn on 2,162 acres, oats for grain on 742 acres, hay on 11,039 acres, sweetpotatoes on 288 acres, sugarcane for sugar on 102 acres, and sorghum on 312 acres. There were 5,893 improved pecan trees of bearing age. Almost 7,000 pounds of improved pecans was harvested in 1964.

The raising of beef cattle and dairy cattle is a major enterprise on farms, and there are several large commercial dairies. Many herds consist of high-quality purebred stock. Livestock on farms in 1964 included 40,961 cattle and calves (4,438 were milk cows), 738 sheep, and 2,202 swine.

Most of the corn, oats, and hay is used for feed on the farms. Volunteer pasture, improved pasture, and supplemental pasture are harvested by grazing.

Climate

East Baton Rouge Parish has a humid, subtropical climate characterized by relatively high rainfall. More than 4 inches of rain falls in every month except September and October. Summers generally are hot and humid. The prevailing winds come from the Gulf of Mexico. The maximum temperature is 90° F. or higher about five-sixths of the days in July and August, but temperatures over 100° are rare. Winters are usually mild. Only about 16 days each year have a minimum temperature of 32° or lower. Moist, tropical air from the south and dry, polar air from the north alternate in winter. Extremely cold weather seldom lasts for more than 3 or 4 days.

Table 10 gives data on temperature and precipitation recorded at the U.S. Weather Bureau Airport Station at Baton Rouge.

The average date of the first temperature of 32° or lower in winter is November 22, and the average date of the last in spring is February 20. The growing season is about 276 days.

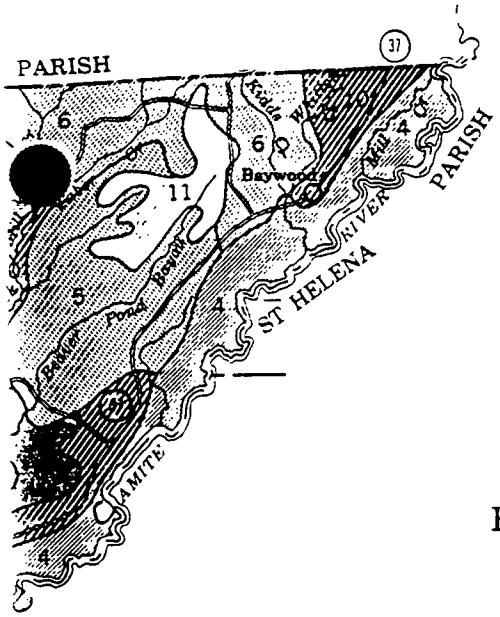
The average annual rainfall is 54.6 inches. Rainfall is sufficient for growing a wide variety of cultivated crops

TABLE 10.—*Temperature and precipitation data*

[All data from U.S. Weather Bureau Airport Station at Baton Rouge, La., for the period 1931-60]

Month	Temperature				Precipitation		
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—	
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—
	°F.	°F.	°F.	°F.	In.	In.	In.
January	63	42	79	26	4.8	2.0	7.5
February	65	45	80	30	4.4	1.8	6.9
March	71	50	83	34	4.9	1.4	8.7
April	78	58	86	43	4.8	2.2	7.9
May	84	64	91	55	4.8	1.3	9.1
June	90	70	95	65	4.1	1.6	9.0
July	91	72	96	69	6.3	2.7	10.7
August	91	72	96	67	5.3	1.6	9.9
September	88	67	95	57	3.5	1.0	5.8
October	81	56	90	43	2.5	.4	5.4
November	70	46	83	30	4.1	1.2	8.6
December	64	43	79	28	5.1	2.7	8.2
Year	78	57	[1] 98	[2] 21	54.6	39.7	70.8

[1] Average annual highest temperature. [2] Average annual lowest temperature.



U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

LOUISIANA AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
EAST BATON ROUGE PARISH, LOUISIANA

SCALE IN MILES

1 0 1 2 3 4

SOIL ASSOCIATIONS

1 — Mhoon-Commerce association: Dominantly level, poorly drained and somewhat poorly drained, loamy soils on broad natural levees of the Mississippi River flood plain; protected from overflow

2 — Sharkey-Tunica association: Level or nearly level, poorly drained, clayey soils of the Mississippi River flood plain; protected from overflow

3 — Sharkey-Mhoon-Crevasse association: Poorly drained to excessively drained, clayey, loamy, and sandy soils of the Mississippi River flood plain; subject to overflow

4 — Cascilla-Ochlockonee association: Level or nearly level, well-drained, loamy soils on flood plains of the Amite River, the Comite River, and tributaries of these; subject to overflow

5 — Olivier-Loring association: Nearly level to gently sloping, somewhat poorly drained and moderately well drained, loamy soils on ridges and in broad valleys

6 — Olivier-Providence association: Nearly level to gently sloping, somewhat poorly drained and moderately well drained, loamy soils on ridges that have long side slopes

7 — Olivier-Loring-Terrace escarpments association: Level to gently sloping, somewhat poorly drained and moderately well drained, loamy soils and steep escarpments

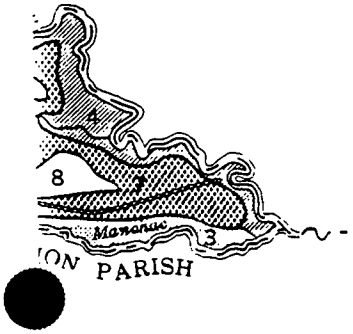
8 — Olivier-Calhoun-Loring association: Dominantly level, poorly drained to moderately well drained, loamy soils on broad flats and in slight depressions

9 — Calhoun-Zachary-Frost association: Level or nearly level, poorly drained, loamy soils on broad flats and in depressions

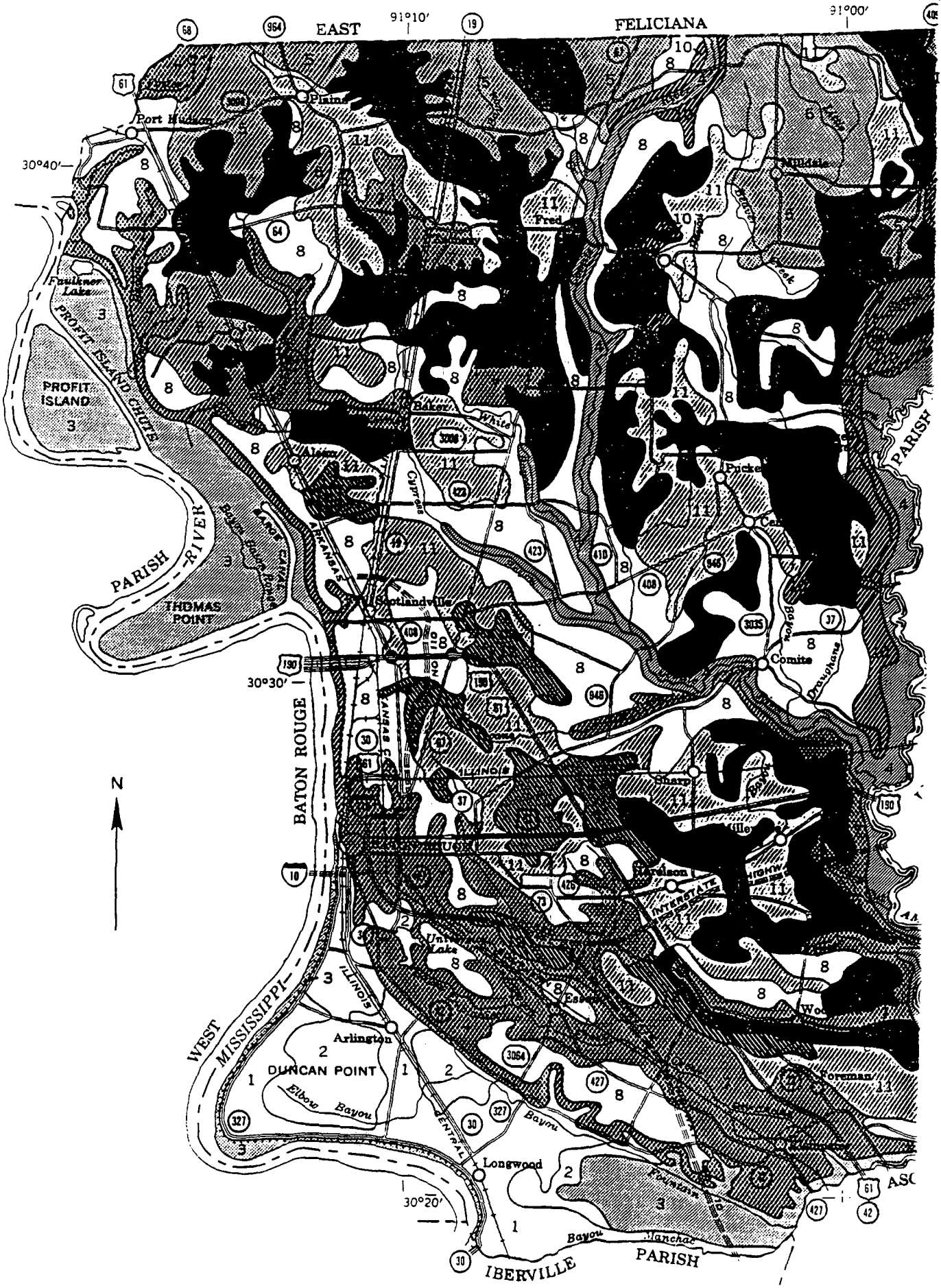
10 — Freeland-Loring-Olivier association: Level to sloping, moderately well drained and somewhat poorly drained, loamy soils on natural levees above the flood plain of the Amite River, the Comite River, and smaller streams

11 — Deerford-Verdun association: Level or nearly level, somewhat poorly drained, loamy soils that have a high content of sodium

12 — Jeanerette association: Dark-colored, somewhat poorly drained, loamy soils, chiefly in depressions



August 1967



EAST
FELICIANA
91°10′
91°00′
30°40′
30°30′
30°20′
Port Hudson
Plains
Fred
Faulkner Lake
PROFIT ISLAND CHUTE
PROFIT ISLAND
PARISH
RIVER
THOMAS POINT
Baker
White
Alsen
Cypress
Scotlandville
Pucket
Comite
Draughans
Sharp
Harelson
INTERSTATE
HIGHWAY
BATON ROUGE
N
WEST
MISSISSIPPI
Arlington
DUNCAN POINT
Elbow
Bayou
Longwood
Foreman
Bayou
Manchac
IBERVILLE
PARISH

REFERENCE 11

MITRE

26 May 1988

Ms. Lucy Sibold
U.S. Environmental Protection Agency
401 M Street, S.W.
Room 2636, Mail Code WH-548A
Washington, D.C. 20460

Dear Ms. Sibold:

Enclosed is a copy of the draft revised HRS net precipitation values for 3,345 weather stations where data were available. The data are presented by state code, station name, latitude longitude, and net precipitation in inches. A list of state codes is also enclosed.

The net precipitation values are provided to assist the Phase II - Field Testing efforts. It is suggested that the value from the nearest weather station in a similar geographic setting be used as the net precipitation value for a site.

If there are any questions regarding this material, please contact Dave Egan at (703) 883-7866.

Sincerely,

Andrew M. Platt
Group Leader
Hazardous Waste Systems

AMP:DEE/hme

Enclosures

cc: Scott Parrish

The MITRE Corporation
Civil Systems Division

FIELD NAME	FIELD DEFINITION
STATE-NUMBER	Characters 1-2 Cooperative State Code for each State. STATE CODE LISTING 01 Alabama — 28 New Jersey 02 Arizona — 29 New Mexico 03 Arkansas — 30 New York 04 California — 31 North Carolina 05 Colorado — 32 North Dakota 06 Connecticut — 33 Ohio 07 Delaware — 34 Oklahoma 08 Florida — 35 Oregon 09 Georgia — 36 Pennsylvania 10 Idaho — 37 Rhode Island 11 Illinois — 38 South Carolina 12 Indiana — 39 South Dakota 13 Iowa — 40 Tennessee 14 Kansas — 41 Texas 15 Kentucky — 42 Utah 16 Louisiana — 43 Vermont 17 Maine — 44 Virginia 18 Maryland — 45 Washington 19 Massachusetts — 46 West Virginia 20 Michigan — 47 Wisconsin 21 Minnesota — 48 Wyoming 22 Mississippi — 49 Not Used 23 Missouri — 50 Alaska 24 Montana — 51 Hawaii 25 Nebraska — 66 Puerto Rico 26 Nevada — 67 Virgin Islands 27 New Hampshire — 91 Pacific Islands
STATION-NUMBER	Characters 3-6 Cooperative Station Number Range = 0001-9999.
DATA-CODE	Character 7 Data Indicator Code 1 = Maximum Mean Temperature 2 = Minimum Mean Temperature 3 = Average (Mean) Temperature 4 = Heating Degree Days 5 = Cooling Degree Days 6 = Precipitation (1951-80 Normals only)

OBS	STATE	NAME		LATNUM	LONNUM	NETPREC
1101	16	GRAND COTEAU		30.26	92.02	22.3867
1102	16	COVINGTON 4 NNW		30.32	90.07	23.8247
1103	16	HAMMOND 3 NW		30.32	90.29	26.8570
1104	16	BATON ROUGE WSO	R	30.32	91.08	20.1282
1105	16	NEVILLE		30.41	91.45	22.3342
1106	16	AMITE		30.43	90.30	26.9962
1107	16	BOGALUSA		30.47	89.52	24.1599
1108	16	ELIZABETH		30.52	92.48	26.1992
1109	16	BUNKIE		30.57	92.10	27.3214
1110	16	LEESVILLE		31.09	93.16	22.0341
1111	16	ALEXANDRIA		31.19	92.28	24.2674
1112	16	BELAH FIRE TOWER		31.38	92.11	26.4149
1113	16	NATCHITOCHES		31.46	93.05	20.9529
1114	16	OLLA 3 SSW		31.52	92.16	26.3273
1115	16	WINNFIELD 2 W		31.56	92.41	23.8727
1116	16	SAINT JOSEPH EXP STA		31.57	91.14	24.7111
1117	16	LOGANSPORT 4 ENE		31.59	93.57	20.1961
1118	16	WINNSBORO		32.09	91.42	24.2368
1119	16	TALLULAH 2 SW		32.24	91.13	25.2981
1120	16	SHREVEPORT WSO	R	32.28	93.49	16.6642
1121	16	MONROE FAA AIRPORT		32.31	92.03	21.6628
1122	16	CALHOUN EXP STATION		32.31	92.20	22.3810
1123	16	RUSTON LA POLYTECH INS		32.31	92.39	23.4018
1124	16	MINDEN		32.36	93.18	20.2617
1125	16	HOMER EXP STATION		32.45	93.04	21.7412
1126	16	BASTROP		32.47	91.54	23.2370
1127	16	LAKE PROVIDENCE		32.49	91.12	25.6024
1128	16	COTTON VALLEY		32.49	93.25	21.3857
1129	16	PLAIN DEALING		32.54	93.41	20.9866
1130	17	PORTLAND WSO	//R	43.39	70.19	25.6420
1131	17	LEWISTON		44.06	70.14	26.3577
1132	17	GARDINER		44.13	69.47	25.3548
1133	17	AUGUSTA FAA AIRPORT		44.19	69.48	23.4279
1134	17	BAR HARBOR		44.23	68.12	32.5261
1135	17	BELFAST		44.24	69.00	29.7955
1136	17	RUMFORD 1 SSE		44.32	70.32	23.9090
1137	17	WATERVILLE PUMP STA		44.33	69.39	22.1899
1138	17	JONESBORO		44.39	67.39	31.1300
1139	17	FARMINGTON		44.41	70.09	26.3940
1140	17	BANGOR FAA AP		44.48	68.49	23.1465
1141	17	MADISON		44.48	69.53	21.2056
1142	17	EASTPORT	R	44.55	67.00	25.5849
1143	17	CORINNA		44.57	69.13	24.0225
1144	17	WOODLAND		45.09	67.24	27.6710
1145	17	PEPOLIMUS DAM		45.53	69.11	19.8047
1146	17	HOULTON FAA AP		46.08	67.47	20.0847
1147	17	HOULTON		46.08	67.50	19.5627
1148	17	PRESQUE ISLE		46.39	68.00	17.1429
1149	17	CARIBOU WSO	//R	46.52	68.01	18.0141
1150	18	CRISFIELD SOMERS COVE		37.59	75.52	16.0542
1151	18	POCOMOKE CITY		38.04	75.33	18.2727
1152	18	PRINCESS ANNE		38.11	75.41	18.3406
1153	18	SNOW HILL 4 N		38.14	75.23	19.6273
1154	18	SOLOMONS		38.19	76.27	16.3734
1155	18	SALISBURY FAA AIRPORT		38.20	75.30	18.7181

REFERENCE 12

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With Special Reference To Increased Pumpage

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December 1961

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
GEOLOGICAL SURVEY
and
DEPARTMENT OF PUBLIC WORKS

In cooperation with the
UNITED STATES GEOLOGICAL SURVEY

Water Resources Bulletin No. 2

GROUND-WATER CONDITIONS IN THE BATON ROUGE AREA, 1954-59

WITH SPECIAL REFERENCE TO INCREASED PUMPAGE

by

C. O. MORGAN

Geologist, U. S. Geological Survey

Published by
DEPARTMENT OF CONSERVATION
LOUISIANA GEOLOGICAL SURVEY
and
LOUISIANA DEPARTMENT OF PUBLIC WORKS
Baton Rouge, La.
December 1961

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GROUND-WATER CONDITIONS IN THE BATON ROUGE AREA, 1954-59 With Special Reference To Increased Pumpage

By C. O. Morgan

WATER RESOURCES BULLETIN NO. 2 December 1961

ABSTRACT

In the Baton Rouge area large quantities of fresh ground water are available from 12 aquifers ranging in age from Pleistocene to Miocene. These aquifers, which are named by their depth of occurrence in and near the Baton Rouge industrial district, are: alluvial deposits, shallow Pleistocene deposits, "400-foot" sand, "600-foot" sand, "800-foot" sand, "1,000-foot" sand, "1,200-foot" sand "1,500-foot" sand, "1,700-foot" sand, "2,000-foot" sand, "2,400-foot" sand, and "2,800-foot" sand. The deepest aquifer, the "2,800-foot" sand, contains fresh water to a maximum of 3,100 feet below mean sea level in the eastern part of the area.

In 1959, pumpage for industrial and public supply uses averaged 93 million gallons per day, which is 43 percent more than that pumped in 1953. The average yield of industrial and public-supply wells is 1,000 gallons per minute. The increase in pumpage, which was from aquifers below the "600-foot" sand, primarily has caused a lowering of water levels in the deeper sands. However, decreased pumpage from the "400- and 600-foot"

sands has caused a recovery of water levels in these shallow aquifers.

In addition, pumpage from all aquifers has caused the northward movement of salt water toward areas of heavy pumping. The exact location of and rate of movement of the salt-water interface in each aquifer has not been determined. The only noticeable migration of salt water has occurred in the "600-foot" sand. Analyses of water from wells south of the industrial district and screened in the "600-foot" sand show an increase in chloride content.

The soft, sodium bicarbonate water in aquifers below the "shallow Pleistocene" aquifer generally can be used without treatment for most purposes.

INTRODUCTION

LOCATION AND GENERAL FEATURES OF THE AREA

The project area (fig. 1) includes East Baton Rouge and West Baton Rouge Parishes and is a modification of the Baton Rouge area as used by Meyer and Turcan (1955, p. 2-3), which included most of East Baton Rouge Parish and small parts of West Baton Rouge and East Feliciana Parishes. The Baton Rouge area is in southeastern Louisiana, which geographically is in the Gulf Coastal Plain (Fenneman, 1938, p. 68). Bordering parishes are East Feliciana and West Feliciana to the north, Pointe Coupee and Iberville to the west, Iberville and Ascension to the south, and Livingston and St. Helena to the east. East Baton Rouge and West Baton Rouge Parishes contain a total of 663 square miles and have a maximum north-south length of 27 miles and a maximum east-west dimension of 37 miles. They are between lat. 30°15′ and 30°45′ north and long. 90°50′ and 91°30′ west.

The Baton Rouge industrial district (pl. 3) is the area bounded on the east by Scenic Highway, on the south by Choctaw Drive, on the west by the Mississippi River, and on the north by an east-west line about 0.4 mile north of Airline Highway.

According to the Bureau of the Census, the population of East Baton Rouge Parish increased from 158,236 in 1950 to 230,058 in 1960, and that of West Baton Rouge Parish increased from 11,738 in 1950 to 14,796 in 1960. The largest city in the area is Baton Rouge, which is the State capital and the home of Louisiana State University.

PURPOSE AND SCOPE

In response to numerous requests for information on the availability of fresh ground water in and near Baton Rouge, the U.S. Geological Survey, as a part of the statewide cooperative program with the Louisiana Department of Public Works and the Louisiana Geological Survey, Department of Conservation, has reanalyzed and corrected ground-water data previously assembled and has analyzed new information obtained during the period 1958-59. Since 1953 the Baton Rouge area has been the center of a major

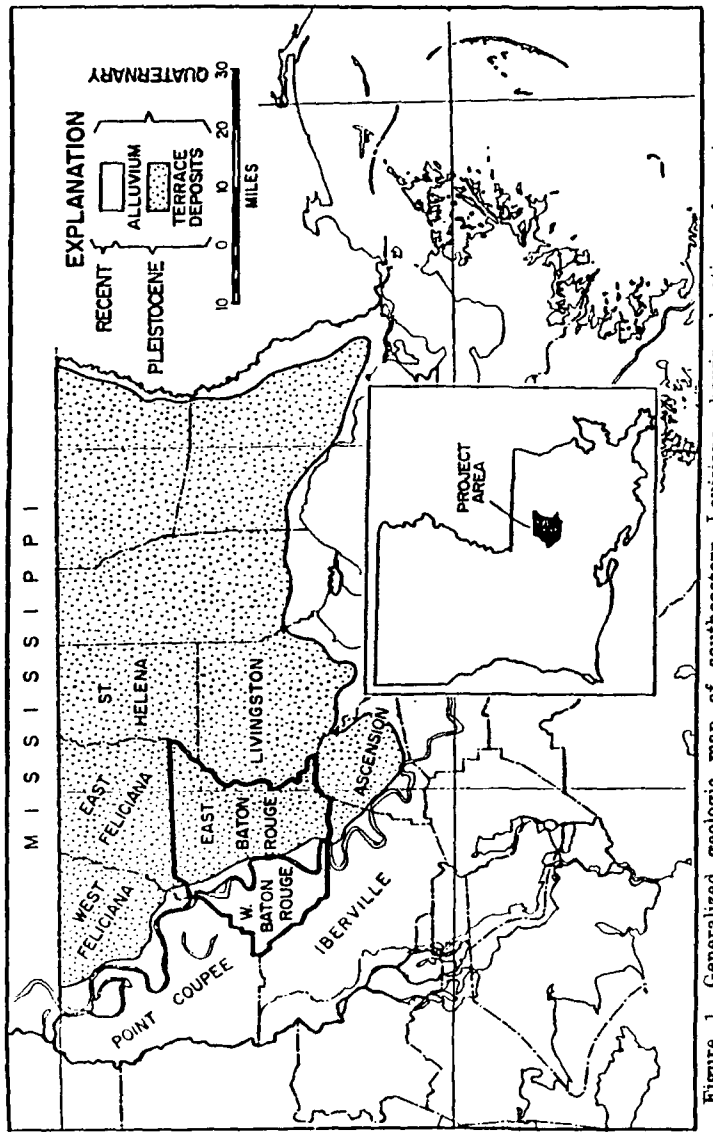

Figure 1. Generalized geologic map of southeastern Louisiana showing location of project area.

industrial expansion in the lower Mississippi River valley. Expansion of existing industries, influx of new industries, and rapid growth of population have caused concern in this area where large quantities of ground water are pumped. It is the purpose of this report to present to the ground-water users new and reanalyzed data that will provide a practical framework for the proper development of this natural resource.

The report augments U.S. Geological Survey Water-Supply Paper 1296, entitled "Geology and Ground-Water Resources of the Baton Rouge Area, Louisiana." Some of the basic and interpretive data in previous reports are repeated but reanalyzed; chemical analyses of the water, evaluation of the hydraulic characteristics of the aquifers, and hydrographs are brought up to date. A fence diagram (pl. 1) is included to show the water-bearing formations that underlie the area. Maps show the location of wells in the area and the density of wells, by aquifer, in the industrial district.

PREVIOUS INVESTIGATIONS

The ground-water resources, geology, geography, and climate of the Baton Rouge area have been described in previous reports. In 1905, a report by G. D. Harris on underground water in southern Louisiana listed the depth of wells, quality of water, and flow of wells in East Baton Rouge Parish at that time. In 1945, E. M. Cushing and P. H. Jones wrote a progress report entitled "Ground-Water Conditions in the Vicinity of Baton Rouge," which was published by the Louisiana Department of Public Works. This report discussed briefly the geology and ground-water hydrology of the area. A more detailed report, entitled "Geology and Ground-Water Resources of the Baton Rouge Area, Louisiana," by Meyer and Turcan was published in 1955 as Water-Supply Paper 1296. In it the authors named the principal aquifers of the area and determined the withdrawals of water and their effect on water levels. Coefficients of transmissibility and storage and data on the quality of water in most of the sands also were presented.

ACKNOWLEDGMENTS

Valuable data and assistance used in the preparation of this report were received from individuals, industries, and governmental agencies, both State and Federal.

Data on pumpage and well construction were provided by Consolidated Chemical Industries, Inc., Copolymer Corp., Corps of Engineers, U.S. Army, Esso Standard Oil Co., Ethyl Corp., Foster Grant Co., Inc., General Chemical Division, and Solvay Process Division of the Allied Chemical & Dye Corp., W. R. Grace & Co., Gulf States Utilities Co., Ideal Cement Co., Kaiser Aluminum & Chemical Corp., Naugatuck Chemical Division of the U.S. Rubber Co., Schuylkill Products Co., Inc., and Union Tank Car Co. Electrical logs, drillers' logs, and well-construction records were obtained from W. M. Eberhart & Sons of Baton Rouge, D. K. Summers of Denham Springs, Layne-Louisiana Co. of Lake Charles, and Acme Wellpoint Corp. of Baton Rouge. Much of the sub-surface geologic information was obtained from electrical logs of oil-test wells provided by Leo W. Hough, State Geologist, Louisiana Geological Survey, Department of Conservation. Leo Bankston and E. C. Donnell, Jr., of the Baton Rouge Water Works Co., furnished pumpage and construction data for public-supply wells and also assisted in making specific-capacity tests. Individuals and officials of the following water companies and municipalities provided additional pertinent data: Alsen Water Co., Inc., Capitol Water Co., Inc., Kleinpeter Water Co., Inc., Village of Addis, Town of Baker, Village of Brusly, Town of Port Allen, and Town of Zachary.

WELL-NUMBERING SYSTEM

Records of water wells in East Baton Rouge and West Baton Rouge Parishes are given in table 3. Locations of the wells listed in this table are shown on either plate 2 or plate 3. Wells in and near the Baton Rouge industrial district are shown also by aquifer screened, on figures 5, 8, 10, 13, 15, 17, 19, 21, 24, and 26. The system of numbering wells in Louisiana is based on an abbreviation of the parish in which they are located and a serial number denoting the order in which they are inventoried. For example, well EB-1 (T. 6 S., R. 1 W.) on the Esso Standard Oil Co. property in Baton Rouge was the first well inventoried by the U.S. Geological Survey in East Baton Rouge Parish. Well WBR-2 (T. 7 S., R. 12 E.) was the second well inventoried in West Baton Rouge Parish. Well WBR-1 was not included in the table because its exact location could not be verified in the field.

Meyer and Turcan (1955, table 5) listed 483 wells in the Baton Rouge area. The difference in the number listed in their report and in table 3 of this report is not only due to the drilling of new wells but is also the result of reinventorying wells whose records and locations were incomplete or inaccurate in 1953.

GEOLOGY

The Baton Rouge area is immediately underlain by deposits of Recent and Pleistocene age (fig. 1), which in turn are underlain by sedimentary rocks of Pliocene(?) and Miocene age. With the exception of the Quaternary alluvium, which lies in the Mississippi River alluvial plain, most of the fresh-water-bearing sands of the Baton Rouge area crop out north of Baton Rouge in the northern part of southeastern Louisiana (fig. 1) and in the southwest corner of the State of Mississippi. Sands of Miocene age are the oldest deposits containing fresh water in the Baton Rouge area.

Pleistocene and Recent deposits constitute the uppermost sediments of East Baton Rouge and West Baton Rouge Parishes. These sediments may be divided into two units. The older consists of Pleistocene deltaic sediments, which underlie the terraced upland area. The younger consists of Pleistocene and Recent alluvium, which is limited to the present Mississippi River flood plain and lies unconformably on the Pleistocene deltaic sediments.

The Recent and Pleistocene alluvial deposits, the main body of which is west of the Mississippi River, have been differentiated by Cardwell and Rollo (1960, p. 10) primarily on the basis of texture and dating by the carbon-14 method. On the basis of carbon-14 dating, they con-

sider the coarse-grained substratum to be of late Pleistocene age and the overlying fine-grained topstratum to be of Recent age. As reported by Kolb and Van Lopik (1958, pls. 9 and 9A), the carbon-14 age of wood specimens collected from a depth of 133 feet in a well 0.7 mile south of Port Allen was 22,100 ± 780 years. The time interval from the end of the Pleistocene to the present was estimated by Horberg (1955, p. 280) to be approximately 11,000 years. Accordingly, most of the sand and gravel valley fill is considered to be of Pleistocene age, and the thin silty clayey mantle is considered to be of Recent age.

The Pleistocene sediments are underlain by sand and shale of Pliocene(?) age. Rollo (1960, p. 38) tentatively designated the base of the "600-foot" sand of the Baton Rouge area as the top of the Pliocene(?). Evidence to confirm or discount this tentative designation was not found during this investigation. In this report the Pliocene(?) includes the sediments between the base of the "600-foot" sand and the top of the "2,000-foot" sand, which is of Miocene age.

As described by Meyer and Turcan (1955, p. 10), the sediments of Miocene age are similar in appearance to the Pliocene(?) and the basal Pleistocene sediments and can be distinguished only by fossil evidence. A sample from the depth of 2,600 feet in a recently drilled water-test well (WBR-51, T. 8 S., R. 12 E.) contained the fossil *Miorangia microjohnsoni*, which marks the approximate top of the Miocene. This stratum correlates with the "2,000-foot" sand of the Baton Rouge industrial area (pl. 1) and supports the assumption of Meyer and Turcan (1955, p. 10) that the "2,000-foot" sand was the uppermost sand of Miocene age.

WATER-BEARING SANDS, THEIR PROPERTIES, AND UTILIZATION

The Baton Rouge area is underlain by a complex sequence of continental and marine sediments. The general relation of these sediments is illustrated on the fence diagram (pl. 1). The naming of the aquifers in accordance with their depth in and near the industrial district follows the usage of Meyer and Turcan (1955, pls. 1 and 2). These aquifers include the "400-foot," "600-foot," "800-foot," "1,000-foot," "1,200-foot," "1,500-foot," "1,700-foot," "2,000-foot," "2,400-foot," and "2,800-foot" sands. Other aquifers include the alluvial deposits and shallow-Pleistocene deposits. The aquifers vary in thickness, grain size, and depth, and the exact location of the fresh- and brackish-water interface in each is as unpredictable as the thickness and continuity of the sands. However, electrical logs of oil-test wells indicate that water in most of the sands in the southern part (pl. 1 and fig. 2) of the area is highly mineralized and unsuitable for use. The altitude of the base of fresh ground water and areas where sands at intermediate depths between fresh-water-bearing sands and the land surface contain brackish water are shown on figure 2. The approximate aggregate thickness of fresh-water-bearing sands can be estimated by multiplying the thickness of the fresh-water-bearing deposits by the percentage of sand shown on figure 2. The average altitude of the land surface, which is relatively flat, is less than 50 feet; therefore, the altitude of the base of the fresh ground water approximates the thickness of fresh-water-bearing deposits.

ALLUVIAL DEPOSITS

Physical properties. The alluvial deposits of Recent and Pleistocene age are limited to the flood plain of the Mississippi River. This relatively flat flood plain occurs west and south of the upland surface, which was named the Prairie terrace by Fisk (Fisk and others, 1938, p. 51). The alluvial deposits consist of approximately 80 percent water-bearing sands and gravels and 20 percent silt and clay. In the flood-plain area the deposits range in thickness

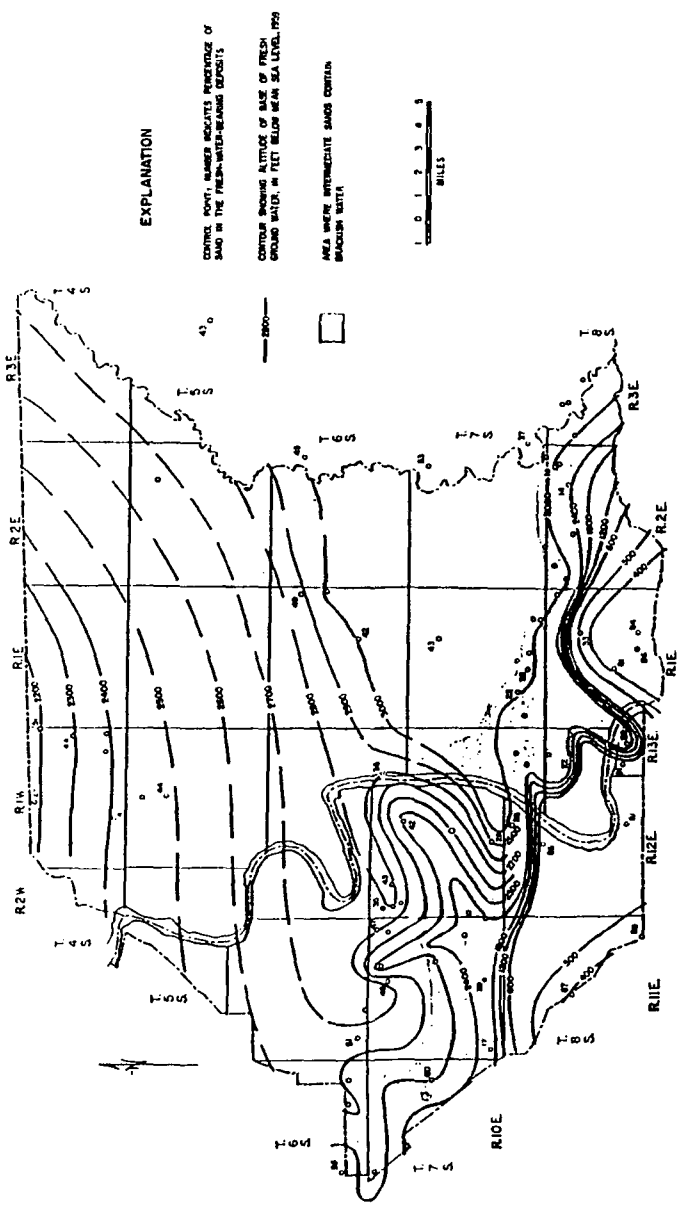

Figure 2. Map showing (1) altitude of the base of fresh ground water, (2) areas where sands at intermediate depths contain brackish water, and (3) percentage of fresh-water-bearing sand, East Baton Rouge and West Baton Rouge Parishes, La.

from 250 feet in northern West Baton Rouge Parish to 600 feet in the south-central part of the report area. Although the alluvial deposits pinch out at the edge of the Prairie terrace, the alluvial aquifer is in direct contact with the "400-foot" aquifer of earlier Pleistocene age (fig. 3).

Hydrologic properties. Water levels in wells screened in the alluvial deposits fluctuated with the river as shown by the hydrograph (fig. 4) for the Mississippi River and for well EB-242 (T. 8 S., R. 1 W.), which is 2.4 miles southeast and 1.9 miles north of the river and 4 miles downstream from the gaging station. (See pl. 2.) The hydrograph shows that during low-river stages the alluvium is discharging water into the river, and that during high-river stages the alluvium is recharged by the river. However, the principal source of recharge to the alluvial aquifer is rainfall.

The locations of wells screened only in the alluvial deposits in and near the industrial district are shown on figure 5. The yields from large-diameter wells range from 800 to 3,750 gpm. Well EB-586 (T. 7 S., R. 1 W.), which is owned by Louisiana State University, is the largest yielding (2,100 gpm) irrigation well in the area. One indication of a well's potential yield is its specific capacity, which is defined as the yield per unit drawdown (usually expressed in gallons per minute per foot of drawdown). The drawdown in a pumped well is caused by head losses in the aquifer resulting from flow in the aquifer toward the well and by well losses due to flow through the well screen and well casing. The well loss due to friction caused by flow through the casing is related to the rate of flow and to the diameter, length, and age of the casing. Therefore, if the well's yield and construction are known the observed specific capacity can be corrected for friction loss in the pipe. Corrected specific capacity is calculated by (1) determining the friction loss, according to standard pipe friction tables, produced by the flow of water through the well casing, (2) subtracting the friction loss from the observed drawdown, and (3) dividing the flow (in gallons per minute) by the corrected drawdown (in feet). Corrected specific capacities of wells in this aquifer range

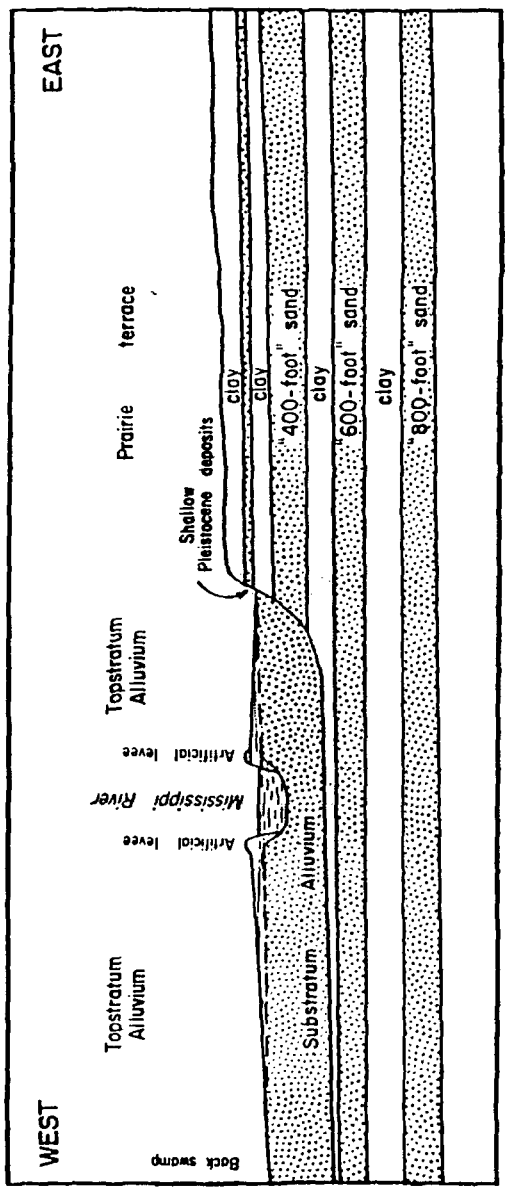

Figure 3. Generalized west-east section showing relation of alluvial deposits to older sediments in the vicinity of the Baton Rouge industrial district.

from 75 to 94 gpm per foot of drawdown and average 80 gpm per foot of drawdown at an average yield of about 2,600 gpm (table 2).

The coefficient of transmissibility[1] of alluvial deposits in the industrial district ranges from 140,000 to 210,000 gpd per foot (table 2) and averages 170,000 gpd per foot. The average permeability[2] of the alluvial deposits in the industrial district is 1,700 gpd per square foot. The coefficient of storage[3] ranges from 1.0×10^{-2} to 9.0×10^{-4}. The coefficient of transmissibility of the alluvial deposits at the site of well EB-586 (T. 7 S., R. 1 W.) is 580,000 gpd per foot. The hydraulic characteristics of an aquifer—coefficients of transmissibility and storage—can be used to determine the theoretical effects of pumping, which were discussed by Meyer and Turcan (1955, p. 59-63).

Quality of water. The alluvium generally yields a hard[4] calcium bicarbonate type water of high iron content. The total iron and manganese content of the water is considerably more than the 0.3 ppm (part per million) recommended by the U.S. Public Health Service (1946, p. 13) as the maximum limit for drinking purposes. The total iron and manganese concentrations ranged from 0.72 ppm in water from well WBR-31 (T. 8 S., R. 12 E.) (table 1) to 18 ppm in water from well EB-501 (T. 6 S., R. 1 W.) (Meyer and Turcan, 1955, table 2). The hardness of water from the alluvium ranged from 123 ppm (WBR-31)

[1]The coefficient of transmissibility is defined as the number of gallons of water that will move in 1 day through a vertical strip of the aquifer 1 foot wide having the full height of the aquifer, under a hydraulic gradient of 1 foot per foot, at the prevailing temperature of the water.

[2]The field coefficient of permeability is expressed as the rate of flow in gallons per day through a cross-sectional area of 1 square foot under a hydraulic gradient of 1 foot per foot at the prevailing temperature of water.

[3]The coefficient of storage of an aquifer is defined as the volume of water it releases from or takes into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface.

[4]In this report, terms describing the general chemical character of water are used in particular senses, as in the following examples: (1) "alkaline" designates a water in which the pH or the hydrogen-ion concentration is more that 7.0; (2) "calcium bicarbonate" designates a water in which calcium and magnesium ranks first, in order of abundance, over sodium and potassium and bicarbonate is the predominant anion; (3) similarly, "sodium bicarbonate" designates a water in which sodium and potassium ranks first, in order of abundance, over calcium and magnesium; (4) the term "fresh water" designates a water in which the chloride content is less than 250 ppm; and (5) classifications of hardness of water are:

Classification	Hardness as $CaCO_3$
Soft	less than 60 ppm
Moderately hard	60 to 150 ppm
Hard	over 150 ppm

to 452 ppm (EB-586, T. 7 S., R. 1 W.). Although the highest chloride content of water reported herein was 126 ppm (WBR-51, T. 8 S., R. 12 E.), electrical logs of oil-test wells in the southern and southwestern corners of the area indicate that the basal part of the alluvial sands contains salt water (pl. 1). The chloride content of water from wells adjacent to the Mississippi River usually is less than 20 ppm.

Meyer and Turcan (1955, table 2) recorded a yearly temperature range from 59° to 74°F for water from a con-

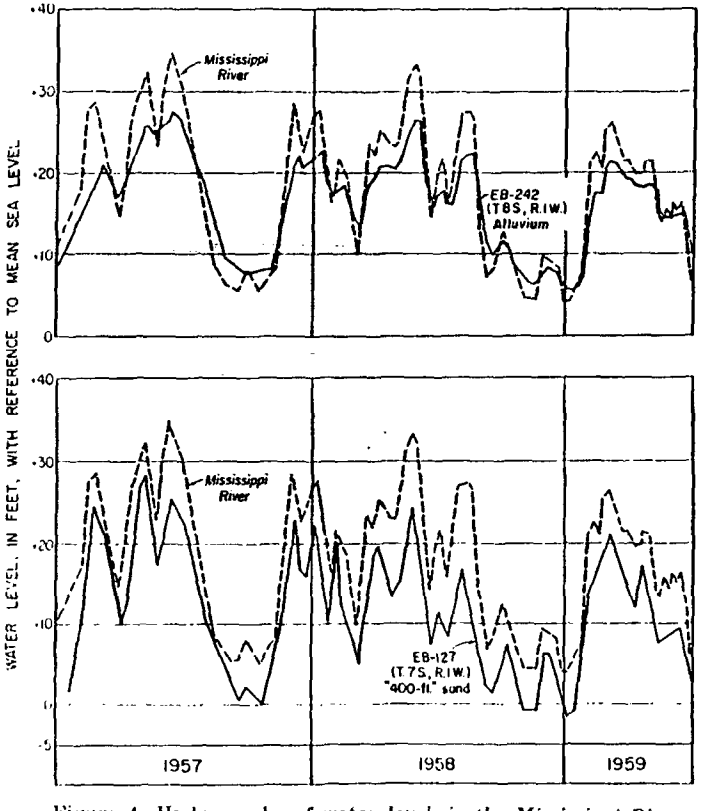

Figure 4. Hydrographs of water levels in the Mississippi River, Recent and Pleistocene alluvium, and "400-foot" sand in the Baton Rouge area.

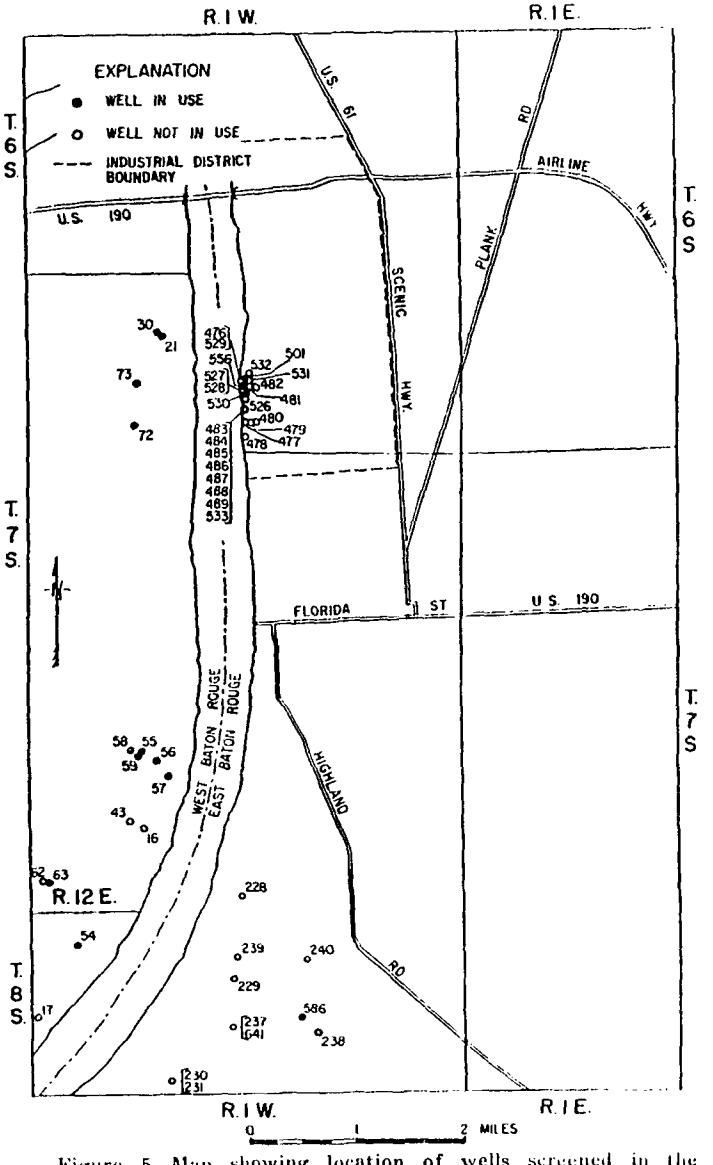

Figure 5. Map showing location of wells screened in the alluvial deposits of Pleistocene age in and near the Baton Rouge industrial district.

tinuously pumped well tapping alluvium (EB-501, T. 6 S., R. 1 W.) on the east bank of the Mississippi River. As distance from the river increases, the magnitude of the yearly temperature variation of well water decreases. Generally the average temperature of water from wells screened in the alluvial deposits is below 70°F.

Withdrawals. Excluding the temporary pressure-relief pumping at the site of the Port Allen locks, it is estimated that in 1959 the daily pumpage from the alluvial deposits was 1.3 mgd. Industries in East Baton Rouge Parish use water from the alluvial deposits for cooling during the warm months. In the cooler months, when the temperature of the river water is below that of the water in the alluvium, river water was used. The maximum amount of water pumped from the alluvium for industrial purposes was about 6 mgd (based on a 31-day period) in October 1956.

Addis is the only municipality in the area that used water from the alluvium. The water-supply system at Addis consists of two wells (WBR-8 and -19, T. 8 S., R. 12 E.), both 232 feet deep.

Many domestic, stock, and irrigation wells are screened in the alluvial sands (table 3). It is estimated that 0.7 mgd of ground water is pumped for these purposes in East Baton Rouge and West Baton Rouge Parishes.

At the Port Allen locks, which are being constructed by the Corps of Engineers, U.S. Army, water is pumped from the alluvium to lower the hydrostatic level so that construction work below river level may proceed without danger of being inundated. In June 1958, a maximum of 47 mgd was pumped (fig. 6) and the average daily pumpage in 1959 was 28 mgd. The total amount of water pumped from 32 temporary wells, 8 permanent wells, and approximately 1,000 dewatering points at this site during the period September 1957, when pumping started, to July 1959 is estimated to be 16.5 billion gallons, or an average of 22 mgd. When construction is completed, 8 wells will be used, during high river stage, to reduce the hydrostatic pressure.

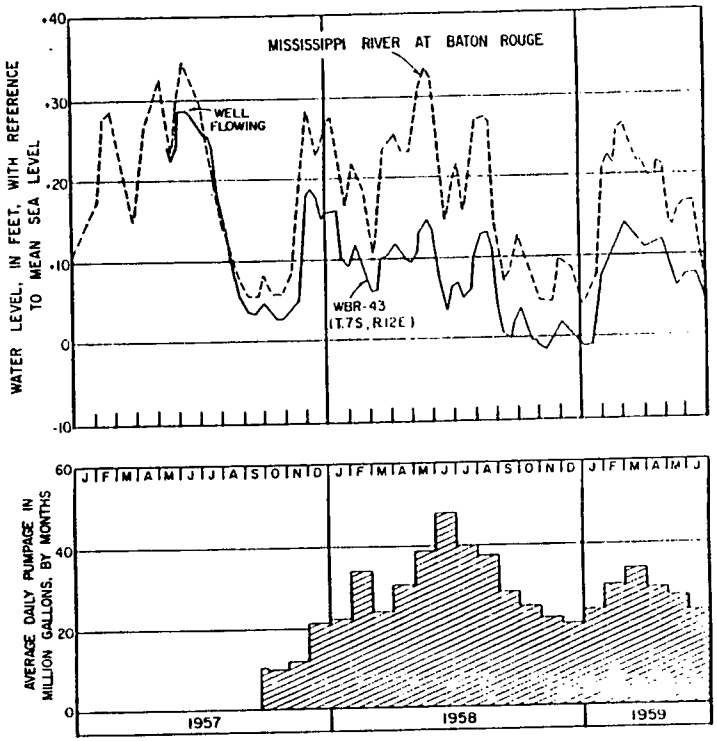

Figure 6. Graphs showing relation of pumpage to water levels in wells screened in the alluvial deposits, Port Allen locks, West Baton Rouge Parish.

Effects of pumping. Drawdown caused by large-scale withdrawal from alluvial sands and gravels, such as at the Port Allen locks, induces influent seepage from the Mississippi River. This boundary (the river) causes the cone of depression affected by large withdrawals to reach equilibrium in form during an early period of pumping. Because river water contains lower concentrations of iron and hardness-causing constituents than water in the alluvium, the quality of the water improves with increased influent seepage from the river. Except for the Port Allen locks area, water levels in most wells screened in the alluvial deposits in the Baton Rouge area have not been affected noticeably by pumping and are usually within 20

feet of the surface. As shown by the hydrograph for well WBR-43, about 0.5 mile from the locks (fig. 6), pumping during the period June 1957-July 1959 at the Port Allen locks in an area of about 2 square miles caused a decline of the water level and increased the quantity of influent seepage. Hydrographs for wells EB-242 and -127, and the river (fig. 4) show the effect of changes in river stage on the water levels in wells some distance from the area of heavy withdrawals.

SHALLOW PLEISTOCENE DEPOSITS

Physical properties. "Shallow Pleistocene" aquifers underlie part of the upland Prairie terrace region of East Baton Rouge Parish, south of the boundary line of T. 6 S. and T. 7 S. The shallow Pleistocene deposits usually are within 200 feet of the surface except in the extreme southeastern corner of the project area where these sands extend to a depth of 450 feet below land surface. As illustrated on plate 1, the shallow Pleistocene deposits are irregular in occurrence and thickness. A mechanical analysis (fig. 7) of sand between depths of 279 and 289 feet in well EB-681 (T. 8 S., R. 2 E.) shows the sand to be medium to coarse grained.

Hydrologic properties. The shallow Pleistocene deposits are recharged by seepage from surface-water bodies and from precipitation on the land surface. Natural discharge takes place at lower elevations in the form of springs and seeps along streams.

Well EB-681 yields 85 gpm with a drawdown of 22.41 feet (table 2). The specific capacity of this well, corrected for head loss due to friction, is 4.0 gpm per foot of drawdown. The location of wells screened in shallow Pleistocene deposits in and near the Baton Rouge industrial district is shown on figure 8.

Quality of water. Several individual sands are grouped within the shallow Pleistocene deposits and the chemical quality of the water in them varies areally. The sand that underlies the city of Baton Rouge yields hard water of the calcium bicarbonate type, as shown by the chemical anal-

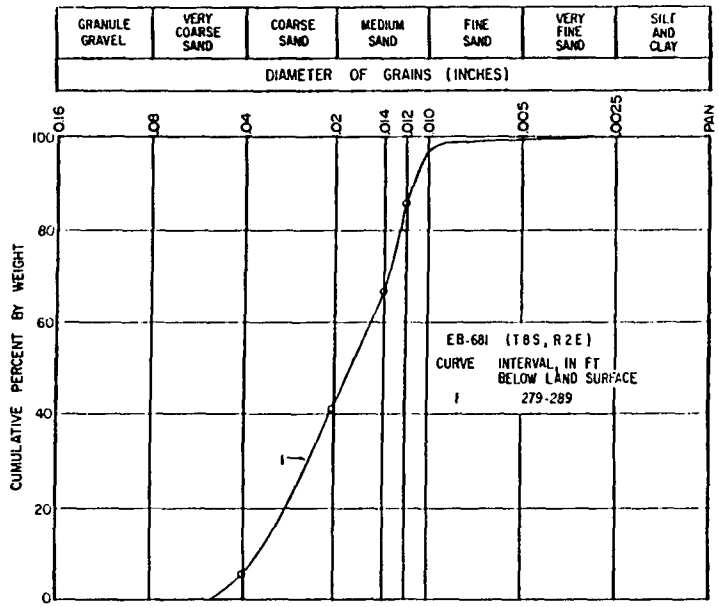

Figure 7. Cumulative curve of mechanical composition of materials from the shallow Pleistocene deposits.

yses (table 1) of water from wells EB-665 (T. 7 S., R. 1 E.) and -687 (T. 6 S., R. 1 E.). The total iron content in water from these wells averages 1.5 ppm. Although the dissolved-solids content of water from well EB-665 was 508 ppm, the individual constituents were not abnormally high. The pH ranges from 6.8 (EB-687) to 7.3 (EB-665). The water from well EB-665 has a temperature of 68°F, which is the average annual temperature of Baton Rouge. Waters having similar chemical constituents are found in the two "shallow Pleistocene" sands in the southeastern part of the project area. The water generally is alkaline, moderately hard, and of sodium bicarbonate type. The iron and manganese concentrations ranged from 0.12 ppm in water from EB-681 (T. 8 S., R. 2 E.) to 0.66 ppm in water from EB-583 (T. 7 S., R. 1 W.). The dissolved-solids content ranged from 277 ppm (EB-599, T. 8 S., R. 3 E.) to 503 ppm (EB-631A, T. 8 S., R. 2 E.). The temperatures of

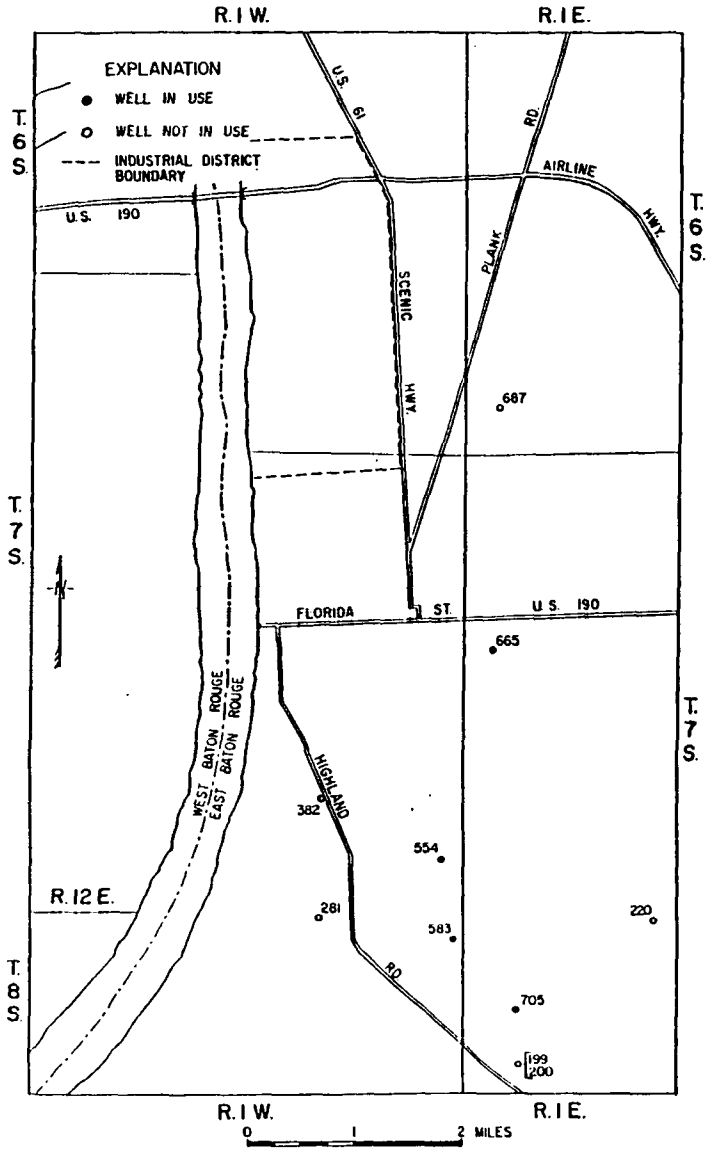

Figure 8. Map showing location of wells screened in the shallow Pleistocene deposits in and near the Baton Rouge industrial district.

the water from wells in southeastern Baton Rouge area range from 69° to 71°F.

The thermal gradient of water from wells in the Baton Rouge area increases by 1°F for about each 90-foot increase in depth. The temperature of water from a well screened at a given depth below 100 feet can be estimated by multiplying the well's depth by the ratio of 1°F per 90 feet and adding the result to the mean annual temperature (68°F). This relation of water temperature to well depth and mean annual temperature is not applicable to the temperature of water from alluvial deposits.

Withdrawals. The "shallow Pleistocene" sands have become important as a source of water for domestic use because of increased needs of the rural population. Small industries in the city of Baton Rouge use water from these sands for washing and cooling purposes; and several privately owned wells yield water for air conditioning and lawn irrigation. The quantity of water pumped from these deposits is negligible and is not considered in the total pumpage figures.

Effects of pumping. As only small amounts of water are pumped from the "shallow Pleistocene" sand, water levels have remained within 20 feet of the surface. In the southernmost part of the area, where brackish water exists at the base of the sand, increased pumping could cause salt water to move toward areas of heavy withdrawals and thus limit the development of this aquifer.

"400-FOOT" SAND

Physical properties. The "400-foot" sand (aquifer) of the Baton Rouge area, which consists of several individual but connected sands, underlies East Baton Rouge Parish and much of West Baton Rouge Parish. As shown on plate 1, the thickness of this unit ranges from 50 feet to 300 feet. Within the industrial district this aquifer ranges in thickness from 75 to 200 feet but is lenticular and is divided into two recognizable sands. (See well 35, pl. 1.)

Sediments of the "400-foot" sand in the industrial district range in grain size from fine to medium. The

source of the grain-size analyses of this aquifer and other deposits is Meyer and Turcan (1955), unless otherwise noted. Cumulative curves (fig. 9) of mechanical composition of material from well EB-638 (T. 7 S., R. 1 E.) show a range in grain size from medium to coarse.

The "400-foot" sand in some places is connected with the alluvial deposits or the "600-foot" sand. The "400-foot" sand is hydraulically connected with the alluvium (pl. 1 and fig. 4) near the western edge of the terraced upland in East Baton Rouge Parish, and with the "600-foot" sand in the southern part of both parishes.

Hydrologic properties. Many of the wells screened in the "400-foot" sand are screened also in the "600-foot" sand. The location of "400-" and "600-foot" wells in and near the Baton Rouge industrial district is shown on figure 10. The yields of large-diameter (8 inches or more)

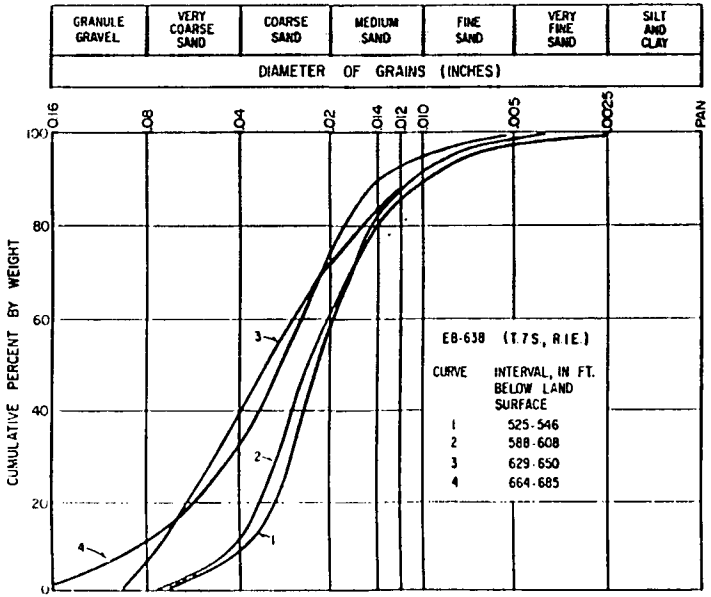

Figure 9. Cumulative curves of mechanical composition of materials from the "400-foot" sand in the Baton Rouge area.

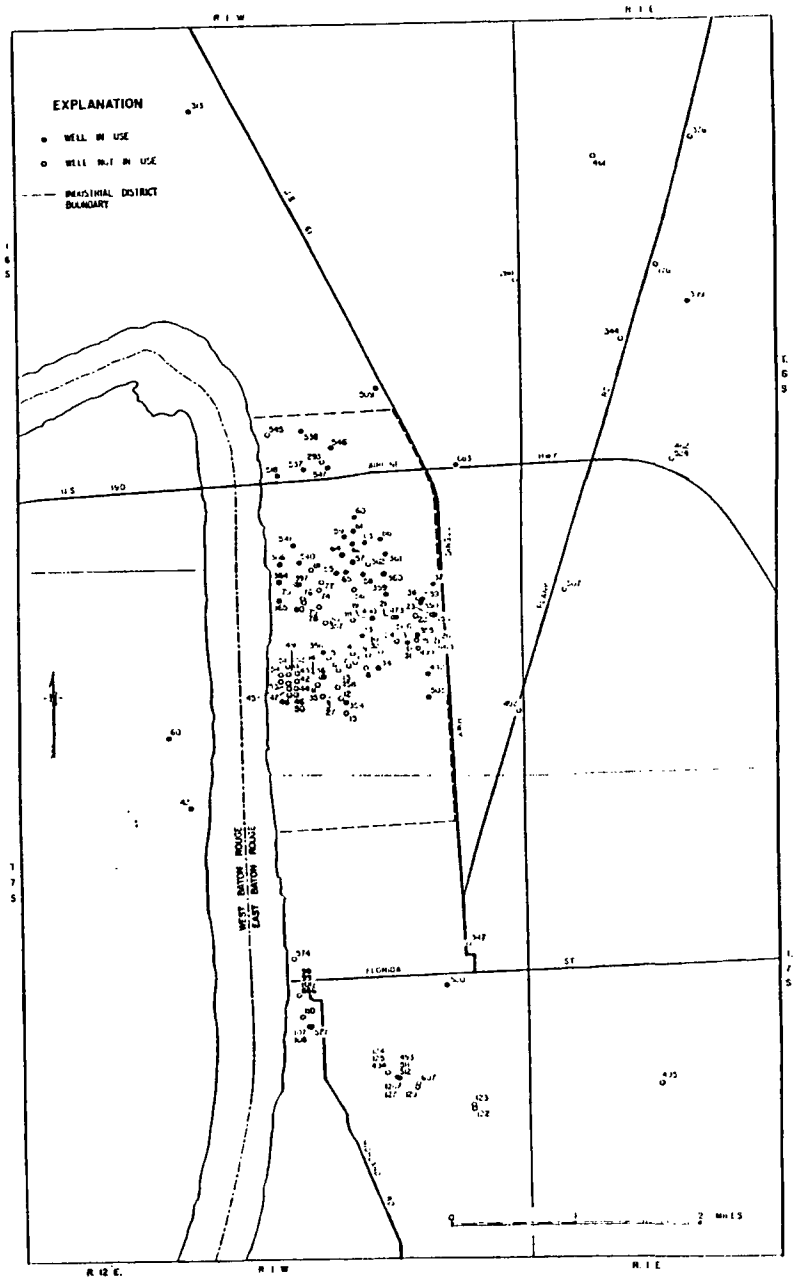

Figure 10. Map showing location of wells screened in the "400-foot" sand, "600-foot" sand, and "400-foot" and "600-foot" sands in and near the Baton Rouge industrial district.

industrial wells screened only in the "400-foot" sand range from 500 to 1,600 gpm. Uncorrected specific capacities of wells in the industrial district range from 13.5 to 45.3 gpm per foot of drawdown. One large-diameter well southeast of Baton Rouge (EB-638, T. 7 S., R. 1 E.) has a specific capacity, corrected for losses due to pipe friction, of 39.6 gpm per foot of drawdown at a yield of 250 gpm (table 2).

The coefficient of transmissibility of the "400-foot" sand (table 2) ranges from 34,000 to 77,000 gpd per foot. The coefficient of permeability ranges from 260 to 530 gpd per square foot and averages 360 gpd per square foot. The coefficient of storage ranges from 2.6 X 10^{-4} to 9.5 X 10^{-4}.

The effect of hydraulic connection between the alluvium and the river is shown by the hydrographs (fig. 4) of the river and well EB-127 (T. 7 S., R. 1 W.) screened only in the "400-foot" sand. There is a slight time lag in the fluctuations of water level in this well but the magnitude of the fluctuations is nearly the same as the changes in the river stage. As shown by these graphs (fig. 4) the Mississippi River discharges at varying rates water into the aquifer.

Quality of water. Water from the "400-foot" sand is of the soft, alkaline, and of sodium bicarbonate type and has a total iron content ranging from 0.04 to 0.57 ppm. Except for water from wells in the southern part of the area in which the chloride content was as much as 113 ppm, the average chloride content of water from wells in this aquifer was less than 8.0 ppm. Periodic and random sampling did not indicate any movement of salt water in this aquifer. Because of its low temperature, water from the "400-foot" sand is used for cooling. The average temperature of water from the "400-foot" sand in the industrial district is 71°F, whereas the temperature of water from wells in the southeastern part of the area is 73°F.

Withdrawals. Because of the large number of wells screened in both the "400-foot" and the "600-foot" sand, it is impossible to compute pumpage by aquifer. Much of the water for industrial use from the "400-" and "600-foot" sands is pumped during the period May to October. Pump-

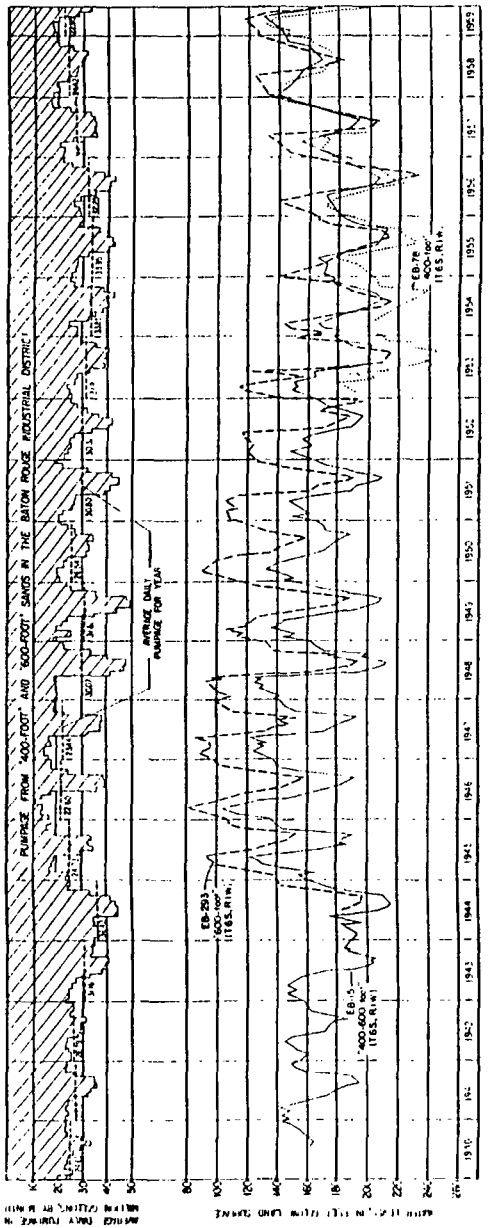

Figure 11. Graphs showing relation of pumpage to water levels in wells screened in the "400-foot" and "600-foot" sands in the Baton Rouge industrial district.

ing for industrial purposes decreases in October and reaches a minimum during the winter. The maximum daily pumpage by year was during the latter part (1944) of World War II, when an average of 36.4 mgd was pumped from the "400-" and "600-foot" sands (fig. 11). The second recorded high was in 1955, when an average of 33.9 mgd was pumped. Since 1955, pumping from the "400-" and "600-foot" sands has gradually decreased, to an average of 22.9 mgd during the first half of 1959.

Although most of the water pumped from the "400-foot" sand is for industrial use, many rural domestic wells also are screened in this aquifer. The only areas where the "400-foot" sand is used for public supply are in the extreme southern part of the upland-terrace areas, where deeper sands contain brackish water. However, the amounts used for rural and public supplies are considered negligible when compared with industrial pumpage.

Effects of pumping. As shown by measurements made in well EB-78 (T. 6 S., R. 1 W.) (fig. 11), water levels in the "400-foot" sand in the industrial district have recovered 70 feet during the 5-year period March 1954-March 1959, an average of 14 feet per year. The hydrograph (fig. 11) of well EB-15 (T. 6 S., R. 1 W.), screened in the "400-" and "600-foot" sands in the industrial district suggests that the recovery trend in wells screened in both aquifers began in 1956 and averaged 14 feet per year, the same as in wells in the "400-foot" sand. Water levels in the "400-" and "600-foot" sands during the period of maximum recovery in 1959 were nearly as high as the highest water level measured in 1947.

"600-FOOT" SAND

Physical properties. The "600-foot" sand, which underlies both East and West Baton Rouge Parishes, consists of several individual but hydraulically-connected sand strata. Because of the lenticularity of the individual sand beds, this aquifer can best be delineated as an interval containing a number of sands. The thickness of the "600-foot" sand ranges from 25 feet to more than 200 feet. The colors of the sand in this aquifer is predominantly yellow-

ish gray and light gray. Dark minerals such as amphibole and pyroxene, combined with a large concentration of quartz, give these sands a "salt-and-pepper" appearance. Cumulative curves show the material to be predominantly of medium grain size, but having an average of 25 percent fine sand. In some areas outside the industrial district the "600-foot" sand is connected with the overlying "400-foot" and the underlying "800-foot" sands (pl. 1).

Hydrologic properties. Thirty-two wells are screened in the "600-foot" sand in the Baton Rouge industrial district (fig. 10). Of this total, 12 are screened in only the "600-foot" sand and 20 are screened in two or more aquifers. The locations of wells screened in the "400-" and "600-foot" sands in and near the industrial district are shown on figure 10. The yields from wells screened in only the "600-foot" sand range from 430 to 1,460 gpm and average 1,000 gpm. The uncorrected specific capacities of wells screened only in this sand average 12.8 gpm per foot of drawdown (Meyer and Turcan, 1955, p. 30).

The coefficient of transmissibility of the "600-foot" sand ranges from 88,000 to 123,000 gpd per foot and averages 110,000 gpd per foot. The coefficient of permeability ranges from 520 to 800 gpd per square foot and averages 630 gpd per square foot. The coefficient of storage ranges from 4.1×10^{-4} to 6.1×10^{-4}.

Quality of water. Fresh water from the "600-foot" sand generally is alkaline, soft, and of sodium bicarbonate type (table 1) and has a total iron content that ranged from 0.02 ppm (WBR-60, T. 7 S., R. 12 E.) to 0.64 ppm (EB-547, T. 6 S., R. 1 W.). The manganese content was usually 0.20 ppm or more, except in wells EB-597 (T. 8 S., R. 3 E.) and WBR-42 (T. 7 S., R. 12 E.), which yielded water with manganese content of 0.02 ppm. The chloride content of water from wells in the industrial district was low, as shown by the analysis for well EB-597. The average temperature of water from wells in the industrial district is 74°F.

The "600-foot" sand is the only aquifer in which encroachment of brackish water has been detected. Several miles directly south of the industries and in the vicinity of

the Baton Rouge City Park, the chloride content of water from the "600-foot" sand has increased. Figure 12 shows the trend in the chloride content of water from wells EB-500 and -493 (T. 7 S., R. 1 W.). During the period 1951 to May 1959 the chloride content of water from well EB-500 increased from 4 ppm to 175 ppm. The chloride content of water from well EB-493 increased from a high of 320 ppm in June 1952 to a high of 590 ppm in May 1959. Well EB-500 is screened in the basal part of the "600-foot" sand and well EB-493, which is 0.75 mile southwest of well EB-500, is screened in the upper and basal sands of the "600-foot" sand. At the site of well EB-493 the upper and basal sands are separated by 75 feet of clay; however, at the site of well EB-500 the intervening clay thins and probably pinches out within a short distance. The chloride content of water from a well (EB-123) at the Baton Rouge City Park increased from 7 ppm in 1947 to 710 ppm in 1950. This well has not been used or sampled since 1950.

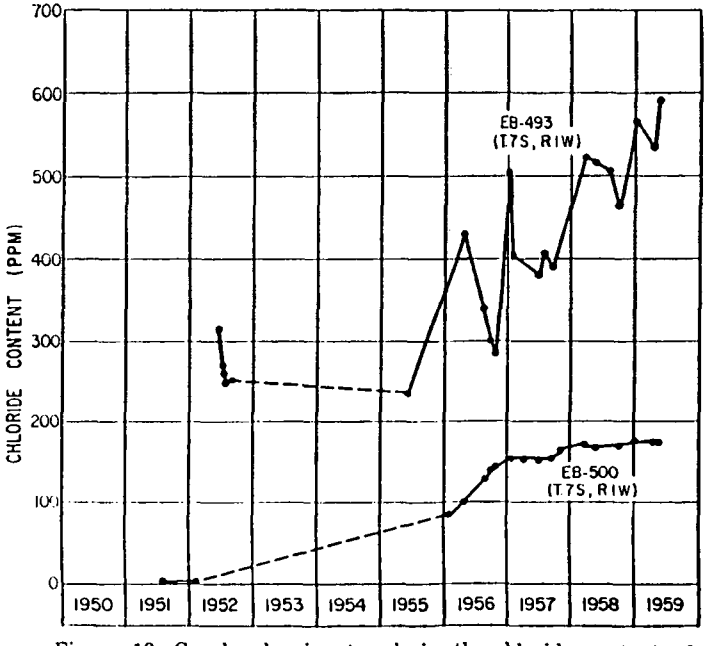

Figure 12. Graphs showing trends in the chloride content of water from wells screened in the "600-foot" sand.

Periodic analysis indicates that the chloride content of water from the "600-foot" sand in the industrial district has not increased in recent years (1955-59).

Withdrawals. Pumpage from the "400-" and "600-foot" sands is combined because of the many wells screened in both sands; and the subject is discussed in the Withdrawals section of the "400-foot" sand.

Effects of pumping. A reduction of pumping from the "600-foot" sand has resulted in a recovery of water levels. As shown by the hydrograph (fig. 11) for well EB-293 (T. 6 S., R. 1 W.), water levels in the "600-foot" sand in the industrial district have recovered from a yearly high of 140 feet below land surface in April 1956 to a yearly high of 118 feet below land surface in April 1959. This recovery on a yearly basis is about 7 feet.

"800-FOOT" SAND

Physical properties. The "800-foot" sand underlies much of East and West Baton Rouge Parishes (pl. 1), and includes within it sand strata that are irregular in thickness and areal extent. The maximum thickness of the freshwater-bearing section of sand ranges from 80 feet in the industrial district to 150 feet near the eastern border of the project area. At the southern edge of the industrial district is an east-west-trending sand unit that has no distinct equivalent to the north or south. (See well 35, pl. 1.) Immediately north of the industrial district, sands of the "800-foot" sand pinch out locally, and clay occupies their stratigraphic position for a short distance.

Mechanical analyses of the "800-foot" sand show the grain size to range from fine to medium, of which an average of 70 percent is medium grained. The color of the sand is similar (yellowish to light-gray) to that of the other sands below the alluvium.

Hydrologic properties. Of the 25 wells screened in the "800-foot" sand (fig. 13), eleven are in use. Some of these wells are screened in two or more sands, which include the "400-foot," "600-foot," "1,000-foot," and "1,200-foot" sands. The maximum yield reported for a well screened

only in the "800-foot" sand is 950 gpm (EB-467, T. 6 S., R. 1 W.); wells in more than one aquifer yield a maximum of 1,400 gpm (EB-398, T. 6 S., R. 1 W.). Specific capacities of two wells, corrected for loss due to pipe friction, are 13.2 and 36.3 gpm per foot of drawdown. The coefficient of transmissibility, as determined from a recovery test at well EB-467, is 24,000 gpd per foot. On the basis of the thickness of the aquifer at the well, the permeability is 270 gpd per square foot (table 2).

Quality of water. Water from the "800-foot" sand generally is of the alkaline, soft, and of the sodium bicarbonate type. Chemical data of water samples collected from three wells (EB-120, T. 7 S., R. 1 W.; EB-159, T. 7 S., R. 1 E.; WBR-83, T. 6 S., R. 11 E.) screened in the "800-foot" sand are listed in table 1. The total iron content of water from wells EB-159 and -120 in the industrial district was 0.04 and 0.09 ppm respectively. As indicated by the analysis of water from well WBR-83 (table 1), the total iron content of water from the "800-foot" sand northwest of the industrial district was 0.43 ppm. The chloride content in water from wells in the "800-foot" sand was less than 10 ppm, but data from electrical logs indicate that water within this sand near the southern boundary of the project area (pl. 1) becomes highly mineralized. The temperature of water from this sand in the industrial district ranges from 76° to 79°F.

Withdrawals. Withdrawals from this sand have been at the rate of about 2 mgd during the last 6 years (1954-59). Most of the water withdrawn from the "800-foot" sand is used by industries; the remainder, which is a negligible amount, is used for domestic purposes.

Effects of pumping. Even though pumping from the "800-foot" sand is nearly uniform throughout the year, the altitude and fluctuations of water level in the "800-foot" sand in the area south of Florida Street (fig. 14) are similar to those in the "600-foot" sand. These similarities are probably the result of hydraulic connection between the two sands. On the basis of this similarity and reported well records, well EB-128 (T. 7 S., R. 1 W.) was considered in 1953 to be screened in the "600-foot" sand (Meyer and

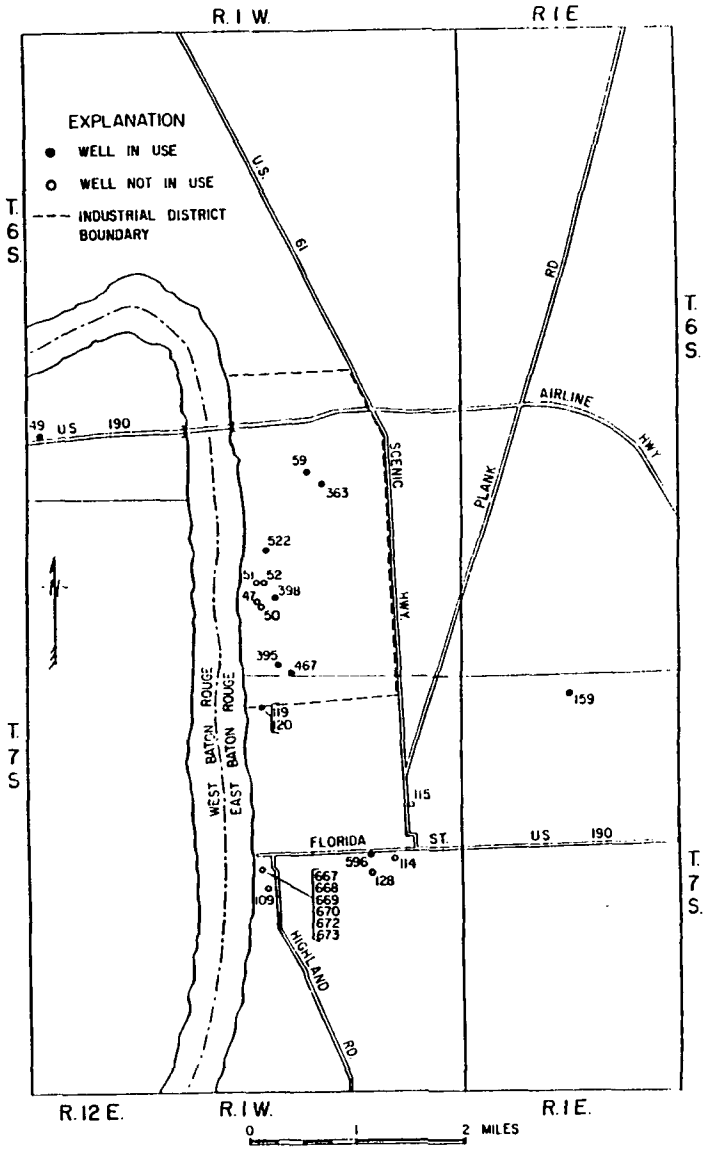

Figure 13. Map showing location of wells screened in the "800-foot" sand in and near the Baton Rouge industrial district.

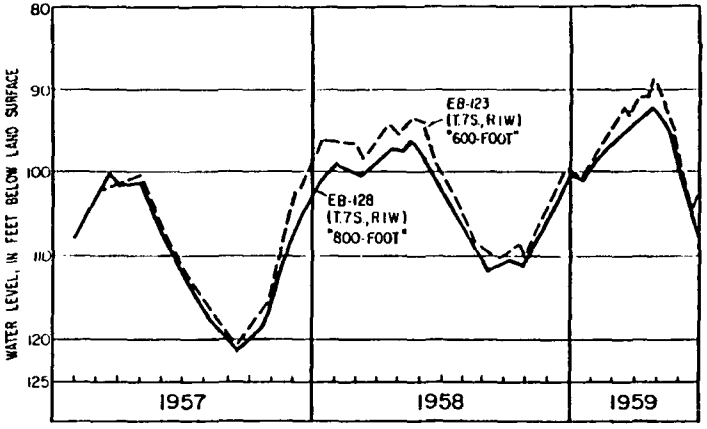

Figure 14. Hydrographs showing water-level fluctuations in wells screened in the "600-foot" and the "800-foot" sands outside the Baton Rouge industrial district.

Turcan, 1955, p. 53). However, well "sounding" and spontaneous-potential and gamma-ray logs indicated that it was 970 feet deep and screened in the "800-foot" sand. However, because of the hydraulic connection between the two sands the water-level fluctuations in well EB-128 are considered to represent those in the "600-foot" sand in the area 2 miles southeast of the center of heavy pumping. Long-term water-level records for well EB-128 show the annual water-level decline in the period Feb. 1941-June 1959 to have been about 0.7 foot. However, as a result of a reduction in pumping since 1954, the water level in this well has recovered at a rate of about 5 feet per year, to a high of 94 feet below the land surface in April 1959.

"1,000-FOOT" SAND

Physical properties. Geologic data indicate that the "1,000-foot" sand, which is a separate hydrologic unit in the Baton Rouge industrial district (pl. 1), coalesces with the "1,200-foot" sand to the north and east of the industrial district. The "1,000-foot" sand is relatively thin (less than 40 feet thick) in the industrial district; however, northward it thickens to 80 feet before connecting with the "1,200-foot" sand. South of the industrial district, it is no more than 50 feet thick.

The sand is similar in color to other Pliocene(?) and Pleistocene sands in the area, being yellowish gray to light gray. Cumulative curves show that the sand is medium to fine grained and has a relatively nonuniform distribution of grain sizes.

Hydrologic properties. Only a few wells screened only in the "1,000-foot" sand were in use in 1959. Of the 20 wells listed in table 3 as screened in the "1,000-foot" sand, only 5 are still in use. Of the five only 2, both of which are screened in more than one aquifer (EB-398 and -522, T. 6 S., R. 1 W.) are in the industrial district. These wells and others in the vicinity are shown on figure 15.

Reported specific capacities, not corrected for loss due to friction in the pipe, of 2 wells screened only in the "1,000-foot" sand are 15 and 26 gpm per foot of drawdown. Because of the lack of suitable wells, pumping tests have not been made in this sand.

Quality of water. A complete chemical analysis (EB-163, T. 6 S., R. 1 W.) and a partial analysis (EB-327, T. 7 S., R. 1 E.) of water from the "1,000-foot" sand indicate the water quality to be similar to that from the "800-foot" and "1,200-foot" sands (table 1). The analysis data for well EB-163 shows the water to be of alkaline and of sodium bicarbonate type. All constituents are low in concentration and the water should be satisfactory for most uses without treatment. Water temperatures in the industrial district range from 77° to 79°F.

Withdrawals. A relatively small quantity of water is withdrawn from the "1,000-foot" sand. The two large-diameter industrial wells (EB-398 and -522) screened in this aquifer are screened also in the "800-foot" and "1,200-foot" sands. The village of Erwinville, in West Baton Rouge Parish, has a privately owned public-supply well that taps the "1,000-foot" sand (WBR-29, T. 6 S., R. 10 E.), which supplies water to several families. Only one "1,000-foot" domestic well (EB-137, T. 6 S., R. 1 E.) inventoried is still in use. An estimated total of 2 mgd is pumped from the "1,000-foot" sand and approximately 90 percent of this water is pumped in the Baton Rouge industrial district.

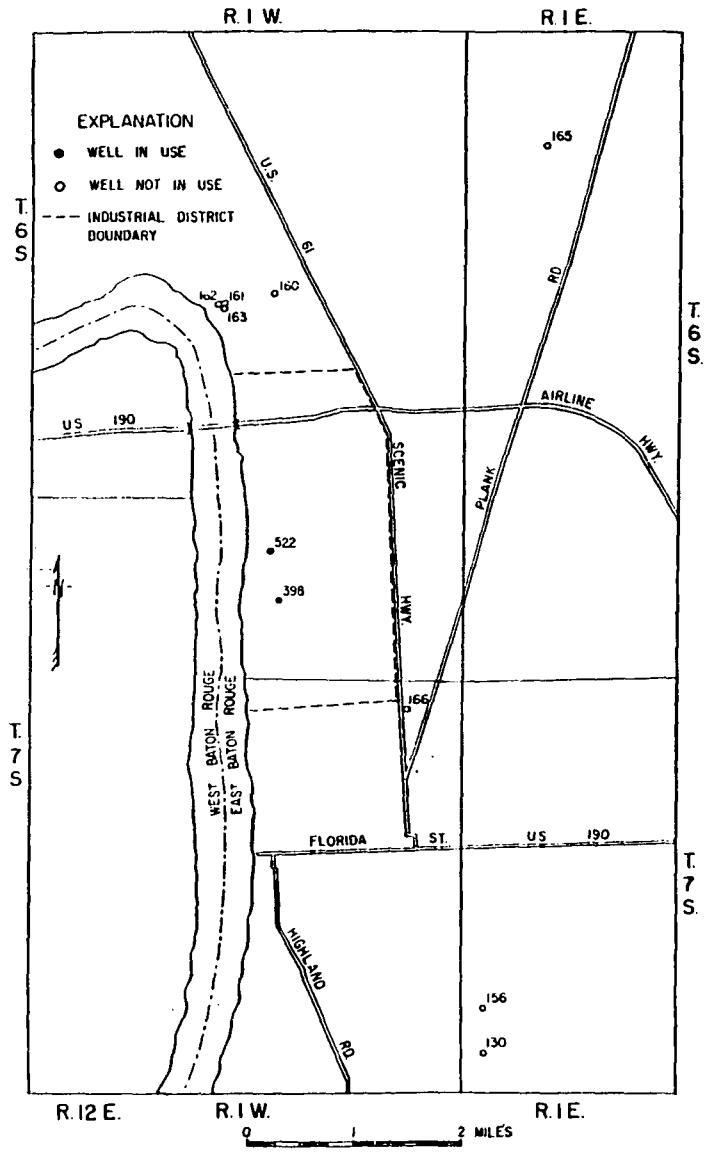

Figure 15. Map showing location of wells screened in the "1,000-foot" sand in and near the Baton Rouge industrial district.

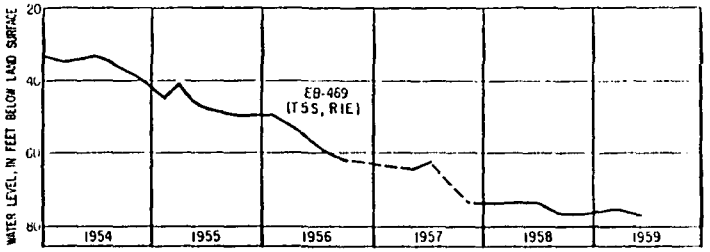

Figure 16. Hydrograph showing water-level fluctuations in a well screened in the "1,000-foot" sand at Baton Rouge.

Effects of pumping. Although withdrawals from the "1,000-foot" sand have not increased during the last few years, the water level in well EB-469 (T. 5 S., R. 1 E.), about 4 miles northeast of the industrial district (fig. 16), has declined at the rate of about 9 feet per year in the period 1954-59. This decline is probably the result of hydrologic connection between the "1,000-foot" sand and the "1,200-foot" sand, which is one of the most heavily pumped aquifers in the industrial district.

"1,200-FOOT" SAND

Physical properties. The "1,200-foot" sand is one of the major water-producing aquifers in the Baton Rouge area. Except for the north-central part of East Baton Rouge Parish, this sand underlies the entire project area. (See pl. 1.) This aquifer has a maximum thickness of 200 feet in the areas north of the industrial district and along the western boundaries of West Baton Rouge Parish (pl. 1). This aquifer is about 100 feet thick in the industrial district. As discussed under the "physical properties" section of the "1,000-foot" sand, the "1,200-foot" sand and the "1,000-foot" sand coalesce a few miles north of the industrial district. (See well 34, pl. 1.)

The "1,200-foot" sand is similar in appearance (yellowish gray to light gray) to other sands of Pliocene(?) and Pleistocene age. Cumulative curves show the grain size to range from fine to medium.

Hydrologic properties. Forty-one of the inventoried wells screened in the "1,200-foot" sand are in use; 35 are

screened only in the "1,200-foot" sand, and 6 are screened in two or more sands. All wells screened in the "1,200-foot" sand in and near the industrial district are shown in figure 17. The pumping yield of 18 industrial and public-supply wells range from 300 to 1,800 gpm and average 970 gpm. Specific capacities of wells in this sand, corrected for head loss due to friction, range from 7.8 to 42.9 gpm per foot of drawdown and average 26.0 gpm per foot (table 2).

The coefficient of transmissibility computed from pumping tests ranges from 22,000 to 120,000 gpd per foot and averages 71,000 gpd per foot. The coefficient of permeability ranges from 300 to 800 gpd per square foot and averages 560 gpd per square foot. The coefficient of storage ranges from 1.6 X 10^{-4} to 8.5 X 10^{-4}.

Quality of water. Except for water from well EB-629 (T. 5 S., R. 1 W.), situated in the northern part of the project area, water from the "1,200-foot" sand is of suitable quality for most purposes without treatment (table 1). It is of the soft, alkaline, and of sodium bicarbonate type, having a pH range from 8.0 to 9.0. The total iron content of the water from wells in the central and southern parts of the area ranged from 0.02 ppm to 0.40 ppm, and the hardness ranged from 0 to 9 ppm. Chloride content of water from wells in the industrial district was less than 5.0 ppm; however, toward the south and east they increased to as much as 38 ppm, as shown by the analyses of samples from wells EB-219 and -326 (T. 7 S., R. 1 E.). The temperatures of the water range from 78° to 81°F.

Withdrawals. The average daily pumpage from the "1,200-foot" sand has increased from 2.5 mgd in 1953 to 18.2 mgd during the first half of 1959. The withdrawals from this sand and their effect on the water level in a well (EB-117) about 3 miles southeast of the industrial district are shown on figure 18.

The industries of Baton Rouge during the first half of 1959 pumped an average of 15 mgd, which represents an increase of more than 8 mgd since 1954. Municipal use at Baton Rouge and Port Allen has increased from 0.5 to about 3 mgd during the same period. Pumping from 10

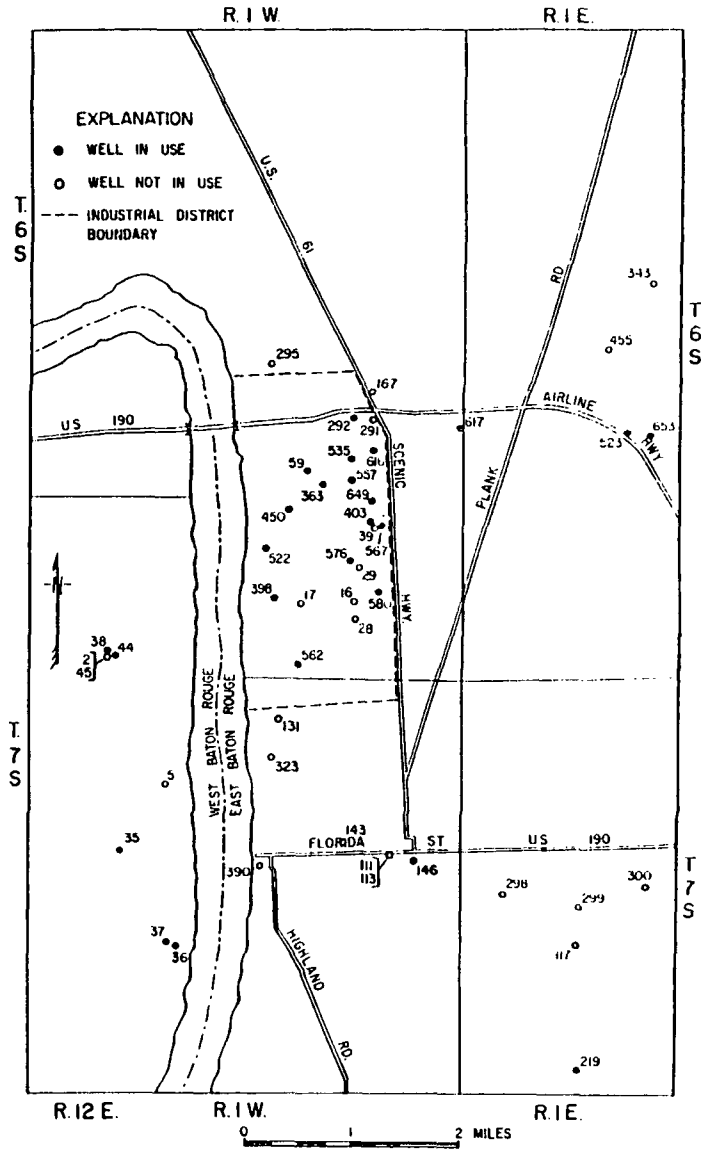

Figure 17. Map showing location of wells screened in the "1,200-foot" sand in and near the Baton Rouge industrial district.

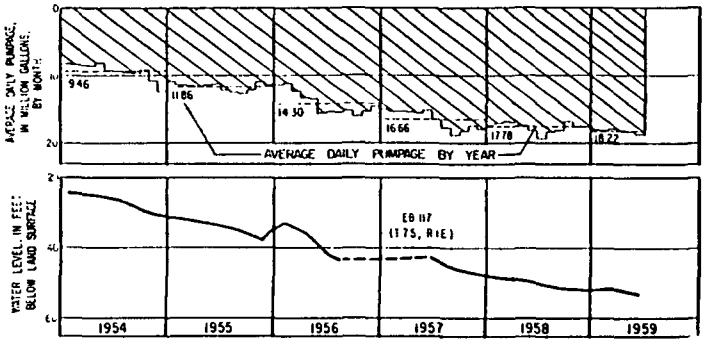

Figure 18. Graphs showing relation of pumpage to water level in a well screened in the "1,200-foot" sand in the Baton Rouge area.

domestic wells contributes only a small amount to the total pumpage. Although the total amount pumped from the "400-" and "600-foot" sands is more than from the "1,200-foot" sand, the "1,200-foot" sand ranks second to the "2,000-foot" sand in quantity pumped from an individual aquifer.

Effects of pumping. The increase in withdrawals from the "1,200-foot" sand has caused an increase in the rate of decline of water levels. As illustrated by the hydrograph (fig. 18) for well EB-117, the annual decline about 4 miles south of the industrial district averaged about 5 feet during the 5½ years, 1954-59. The water level in well EB-535 (T. 6 S., R. 1 W.), located in the approximate center of pumping, declined about 20 feet per year from 1952 on, to a low of 133 feet below land surface in May 1958.

"1,500-FOOT" SAND

Physical properties. Except in the industrial district, the "1,500-foot" sand underlies East Baton Rouge and West Baton Rouge Parishes (pl. 1). Two or three sands separated by clay units normally comprise the "1,500-foot" sand in the vicinity of the industrial district; however, the clay beds are not areally extensive and the sands are hydraulically connected. The aquifer has a maximum thickness of 300 feet in the eastern part of East Baton Rouge Parish, and an average thickness of 100 feet in the project area. The "1,500-foot" sand coalesces with the "1,700-foot" sand in southeastern West Baton Rouge Parish (pl.1).

The sediments of the "1,500-foot" sand are olive gray to yellowish gray in color. The sand is primarily of medium grain size; 40 percent or less of the material is fine grained.

Hydrologic properties. Of the inventoried wells listed in table 3 for the "1,500-foot" sand, 65 are in use. Five of these are screened in more than one aquifer. The location of wells screened in the "1,500-foot" sand in and near the industrial district are shown on figure 19. The yields from 6 representative public-supply and industrial wells that are screened only in the "1,500-foot" sand range from 300 to 1,200 gpm, and average 830 gpm. Specific capacities of wells in the "1,500-foot" sand, corrected for head loss in the pipe, range from 14.7 to 54.7 gpm per foot of drawdown (table 2) and average 33.2 gpm per foot of drawdown.

The coefficients of transmissibility as determined from two pumping tests are 76,500 and 90,100 gpd per foot. On the basis of the aquifer's thickness, the coefficients of permeability are 960 and 1,160 gpd per square foot. The tests were recovery tests on the pumped well and it was not possible to determine the coefficient of storage. As the "1,500-foot" sand is an artesian aquifer, the coefficient of storage probably will range between 1×10^{-3} and 1×10^{-4}.

Quality of water. Fresh-water-bearing sands of the "1,500-foot" sand yield water that is alkaline, soft, and of sodium bicarbonate type (table 1). The total iron content of the water from 8 wells (excluding well EB-280) ranged from 0.02 ppm to 0.35 ppm. (See table 1.) Except for wells EB-280 and -569 (T. 7 S., R. 1 W.), the chloride content of water from the "1,500-foot" sand ranged from 4.0 to 7.0 ppm. As indicated by the analyses data of samples from wells EB-280 and -569 (table 1), the chloride content of water from wells in the south-central part of the area ranged from 201 to 3,050 ppm. The dissolved solids in water from wells in this part of the project area ranged from 666 to 5,290 ppm. In the remainder of the area, the dissolved-solids content ranged from 193 to 250 ppm. The temperature of the water generally ranges from 82° to 89°F.

Withdrawals. During the first half of 1959 pumpage from the "1,500-foot" sand averaged 7.5 mgd, which rep-

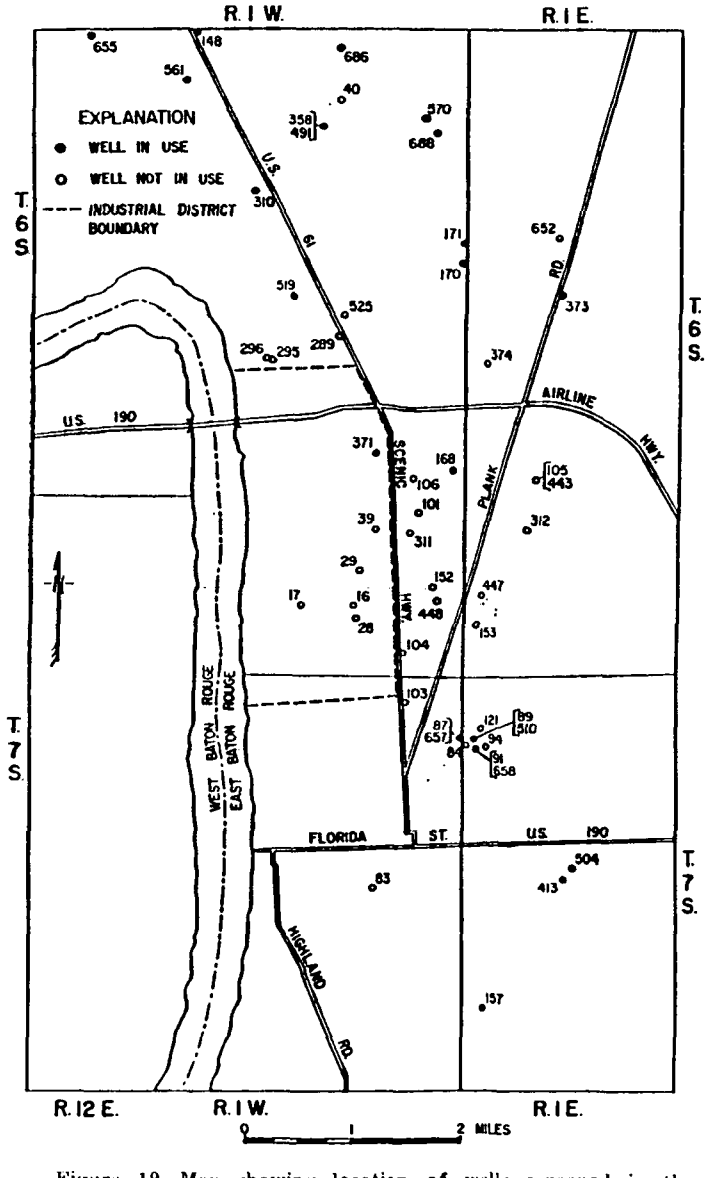

Figure 19. Map showing location of wells screened in the "1,500-foot" sand in and near the Baton Rouge industrial district.

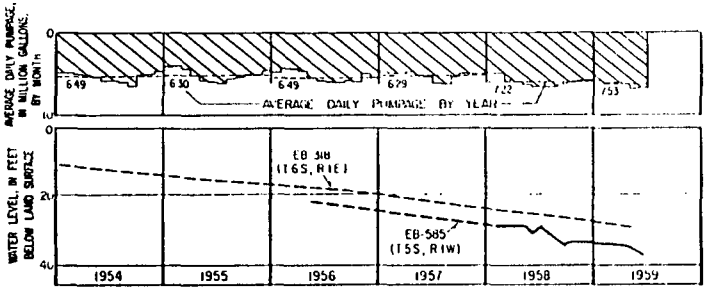

Figure 20. Graphs showing relation of pumpage to water levels in wells screened in the "1,500-foot" sand in the Baton Rouge area.

resents an increase of 1 mgd since 1954. Approximately 85 percent (6.2 mgd) of the water pumped is for public supply in Baton Rouge; industries use approximately 1.3 mgd. Of the inventoried domestic wells in use in 1959, 24 are screened in the "1,500-foot" sand. However, only small quantities of water are pumped from these wells and they are not considered in the total pumpage. Two irrigation wells (EB-157, T. 7 S., R. 1 E., and -348, T. 6 S., R. 1 E.) contribute a small amount to the total pumpage.

Effects of pumping. As shown by the water-level records (table 3) for well EB-94 (T. 7 S., R. 1 E.), the annual water-level decline since 1940 has been about 6 feet in wells near the center of pumping from the "1,500-foot" sand. The relation of pumpage to water levels in wells at different distances from the center of pumping is shown by figure 20. It can be seen that the rate of decline in areas about 6 miles north (well EB-585, T. 5 S., R. 1 W.) and about 7 miles east (EB-318, T. 6 S., R. 1 E.) of the industrial district is the same (3.6 feet per year).

"1,700-FOOT" SAND

Physical properties. The aquifer named the "1,700-foot" sand in the Baton Rouge industrial district is considered to be of Pliocene(?) age. It is irregular in occurrence (pl. 1), and in several areas clay occurs in the same interval. In the northwest corner of East Baton Rouge Parish the unit is represented by a sand 240 feet thick, but eastward the facies change to clay. In southeast East Baton Rouge Parish a maximum thickness of 130 feet con-

stitutes the "1,700-foot" sand. In the industrial district the aquifer is 120 feet thick. Southwest of the industrial district the "1,700-foot" sand connects with the "1,500-foot" sand (pl. 1).

Cumulative curves of the "1,700-foot" sand show it to be primarily a medium-grained sand, less than 20 percent being fine-grained material. Its appearance is the same as that of other sands of Pliocene(?) and Pleistocene age.

Hydrologic properties. Of the wells listed in table 3, 32 are screened in the "1,700-foot" sand and are in use. Of these 32 wells, 8 are screened in more than one aquifer. Twenty-eight wells are for domestic or public supply, and 4 are owned by industries. The location of the "1,700-foot" wells in and near the industrial district are shown on figure 21.

Reported yields from two industrial wells whose screens are 6 inches, or more, in diameter are 1,000 gpm (EB-68, T. 6 S., R. 1 W.) and 850 gpm (EB-73, T. 6 S., R. 1 W.). Specific capacities of two wells screened in the "1,700-foot" sand are 41.6 gpm per foot of drawdown (corrected for head loss) (EB-68) and 16.8 gpm per foot of drawdown (uncorrected) (EB-282, T. 5 S., R. 1 E.). (See table 2.) The coefficient of transmissibility as determined from a recovery test made in well EB-68 in the industrial district is 32,000 gpd per foot. On the basis of the aquifer's thickness, the coefficient of permeability is 240 gpd per square foot (table 2).

Quality of water. The "1,700-foot" sand yields water that is alkaline, soft, and of sodium bicarbonate type (table 1). The total iron content in water tested ranged from 0.01 to 0.04 ppm. Chloride content of the water ranged from 3.2 to 5.0 ppm and the dissolved-solids content ranged from 197 to 235 ppm. Silica occurred in sufficient quantities (21 to 45) to cause scaling when the water is used as low-pressure boiler feed (Hem, 1959, p. 254). The temperature of the water from the "1,700-foot" sand ranges from 80° to 87°F and in the industrial district, from 84° to 86°F. Electrical logs of oil-test wells indicate that the dissolved-solids content of water from this aquifer in the southern part of the area probably is more than

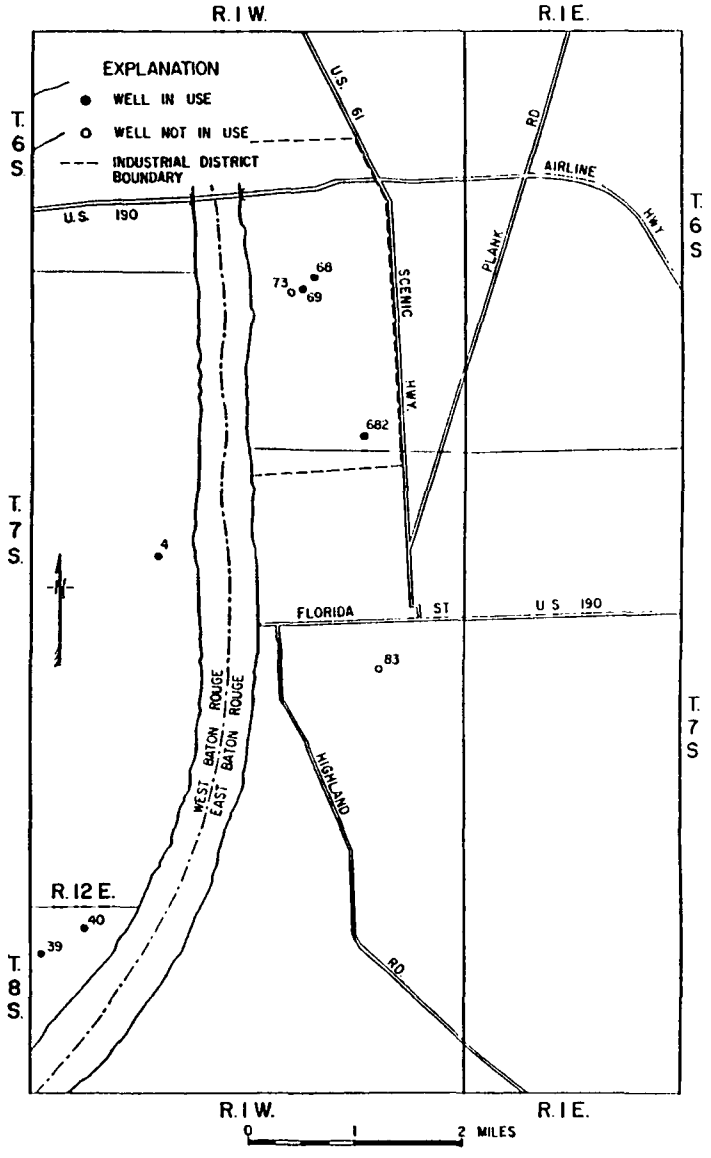

Figure 21. Map showing location of wells screened in the "1,700-foot" sand in and near the Baton Rouge industrial district.

1,000 ppm and the water may be unsuitable for domestic and municipal uses (U.S. Public Health Service, 1946, p. 383).

Withdrawals. Since 1953, estimated withdrawals from the "1,700-foot" sand have increased from 1.4 mgd to 2.0 mgd. The major users of the water are industries and the town of Port Allen. Although 17 wells in this aquifer are used for domestic supply, the quantity pumped is small and is not considered in the total pumpage figures.

Effects of pumping. Long-term water-level measurements are not available for the "1,700-foot" sand. The water level in well EB-68 (T. 6 S., R. 1 W.) in the industrial district is reported to have declined at a rate of about 4 feet per year since 1953, and the water level stood at 90 feet below land surface on January 7, 1959.

"2,000-FOOT" SAND

Physical properties. The "2,000-foot" sand is considered the uppermost aquifer of Miocene age in the Baton Rouge area. Except for a small part of north-central East Baton Rouge Parish and the south-central part of the project area, this sand underlies most of the area (pl. 1). In the vicinity of the industrial district and immediately northwestward this aquifer is divided by local clay lenses into three separate sand units; generally, however, the "2,000-foot" sand occurs as a single unit broken only by a few clay lenses.

Except for the northern quarter and the extreme south-central part of the area, and west of the industrial district, the thickness of the "2,000-foot" sand normally is 150 feet or more. The sand has a maximum thickness of 300 feet in the industrial district and southeastern East Baton Rouge Parish.

The "2,000-foot" sand apparently has no direct hydraulic connection with the overlying "1,700-foot" sand or the underlying "2,400-foot" sand; however, the original static (nonpumping) levels in the "2,000-foot," "2,400-foot," and "2,800-foot" sands were nearly the same and indicate a common recharge area.

The "2,000-foot" sand is light gray to light brownish gray and is generally of medium grain size, averaging less than 20 percent fine-grained material.

Hydrologic properties. Of the wells listed in table 3, 44 are screened in the "2,000-foot" sand and were in use in 1959. Four of these are multiple-screen wells. Wells screened in the "2,000-foot" sand in and near the Baton Rouge industrial district are shown on figure 22. Yields from 13 public supply and industrial wells screened only in the "2,000-foot" sand range from 870 gpm to 1,800 gpm and average 1,200 gpm. The specific capacities for five wells, corrected for head loss due to pipe friction, range from 31.5 to 94.7 gpm per foot of drawdown and average 48.8 gpm per foot of drawdown (table 2).

Results of four pumping tests indicate a range in the coefficient of transmissibility from 160,000 to 243,000 gpd per foot (table 2) and an average of 205,000 gpd per foot. The coefficient of permeability ranges from 1,100 to 1,500 gpd per square foot and averages 1,250 gpd per square foot. The coefficients of storage determined for two wells are 7.1×10^{-4} and 6.2×10^{-4}.

Quality of water. The "2,000-foot" sand of Baton Rouge yields water that is soft, alkaline, and of sodium bicarbonate type (table 1). Except for the water from a well (EB-304, T. 5 S., R. 2 E.) near the eastern boundary of the report area, the total iron in water from this sand ranged from 0.00 to 0.23 ppm. The manganese content of water in the industrial district was less than 0.02 ppm. With the exception of water from irrigation well EB-575 (T. 8 S., R. 1 W.), south of the city of Baton Rouge, the chloride content of water from the "2,000-foot" sand generally was less than 5.0 ppm. However, that in well EB-575 increased from 196 ppm in 1955 to 224 ppm in April 1959. This increase probably was the result of movement of more highly mineralized water because of local pumping. The sand contains fresh water to the south-central boundary of the report area (well 5, pl. 1), where well EB-575 is screened in this sand. The temperature of water from the "2,000-foot" sand in the project area ranges from 85° to 96°F and in the industrial district, from 88° to 92°F.

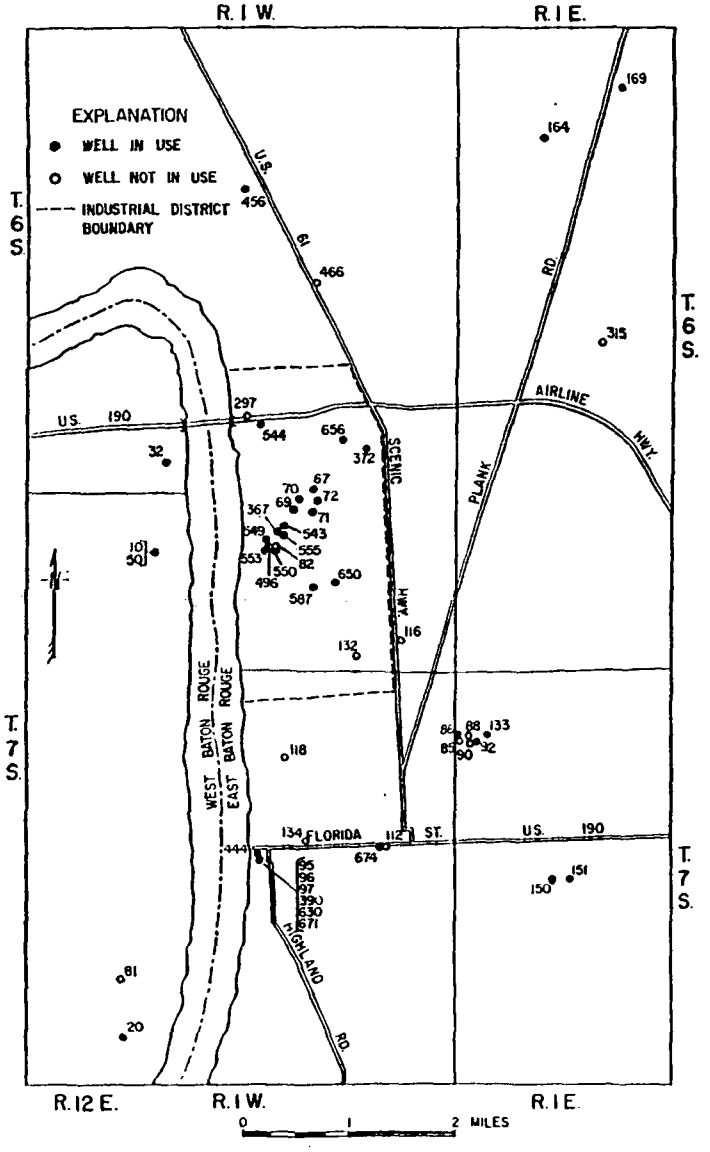

Figure 22. Map showing location of wells screened in the "2,000-foot" sand in and near the Baton Rouge industrial district.

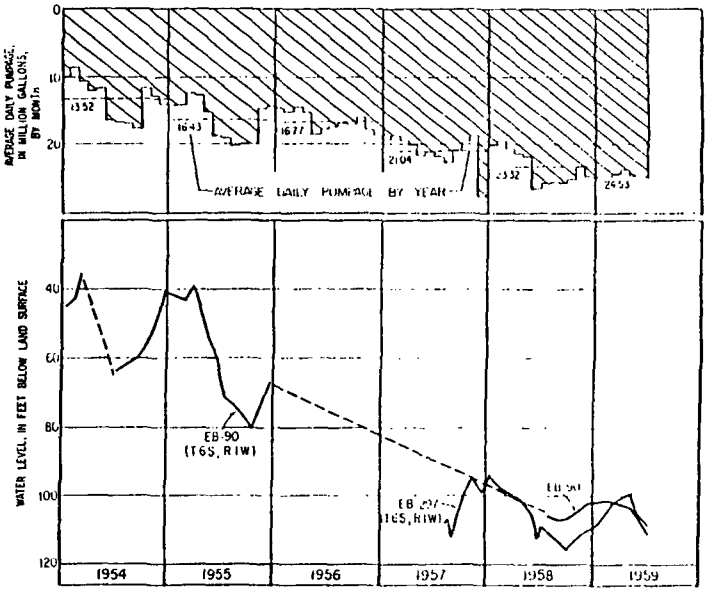

Figure 23. Graphs showing relation of pumpage to water levels in wells screened in the "2,000-foot" sand in the Baton Rouge area.

Withdrawals. The "2,000-foot" sand is one of the most important aquifers of the Baton Rouge area, yielding more than one-fourth of the ground water used for industry and public supply. As shown on figure 23, an average of 24.5 mgd was pumped from this sand during the period January-July 1959. This pumpage rate was slightly greater than that from the "400-" and "600-foot" aquifers during the same period. In 1954, 13.5 mgd was pumped from the "2,000-foot" sand and in 1959 the average pumpage was 24.5 mgd, an increase of 11 mgd in a 5-year period. One-quarter of the water pumped from the "2,000-foot" sand in 1959 (6 mgd) was used for public supply in Baton Rouge; the remainder was used by industries. Six domestic wells that now use the "2,000-foot" sand as a source of supply produce an insignificant amount of water.

Effects of pumping. As shown by the hydrograph (fig. 23) for well EB-90 (T. 7 S., R. 1 E.), water levels have declined at an annual rate of 13 feet during the

period Jan. 1954-June 1959. This well is immediately southeast of the industrial district but is in an area where several nearby public-supply wells produced from the "2,000-foot" sand. Since 1957 pumping from nearby wells decreased drastically and the subsequent fluctuations in this well primarily are the result of regional withdrawals. During 1958-59 the annual rate of decline in this well decreased to 4 feet. The rate of decline during the same 2 years in well EB-297 (T. 6 S., R. 1 W.), located along the northern perimeter of the industrial district, was 5 feet per year (fig. 23). If pumping continues to increase, water levels will continue to decline at a comparable rate; however, if withdrawals are stabilized, the rate of decline will decrease and water levels will approach equilibrium.

"2,400-FOOT" SAND

Physical properties. With the exception of a small area west of the industrial district, the "2,400-foot" sand underlies most of the project area. The thickness of the "2,400-foot" sand ranges from 80 feet in northwestern East Baton Rouge Parish to 250 feet in northeastern East Baton Rouge Parish. In southeastern East Baton Rouge Parish this aquifer is connected with the "2,800-foot" sand (pl. 1).

Cumulative curves of material from the "2,400-foot" sand show it to be fine- to medium-grained, containing lenses of coarse sand. The olive-gray to yellowish-gray color is similar to that of the "2,000-foot" and "2,800-foot" sands.

Hydrologic properties. As of June 1959, a total of 25 wells screened in the "2,400-foot" sand were in use. (See table 3.) Three of these wells are screened in more than one sand. Wells screened in the "2,400-foot" sand in and near the industrial district are shown on figure 24.

The yields of 6 industrial wells screened only in the "2,400-foot" sand range from 600 to 1,470 gpm and average 1,000 gpm. Specific capacities of 3 wells, corrected for head loss due to pipe friction, range from 15.9 to 45.5 gpm per foot of drawdown (table 2).

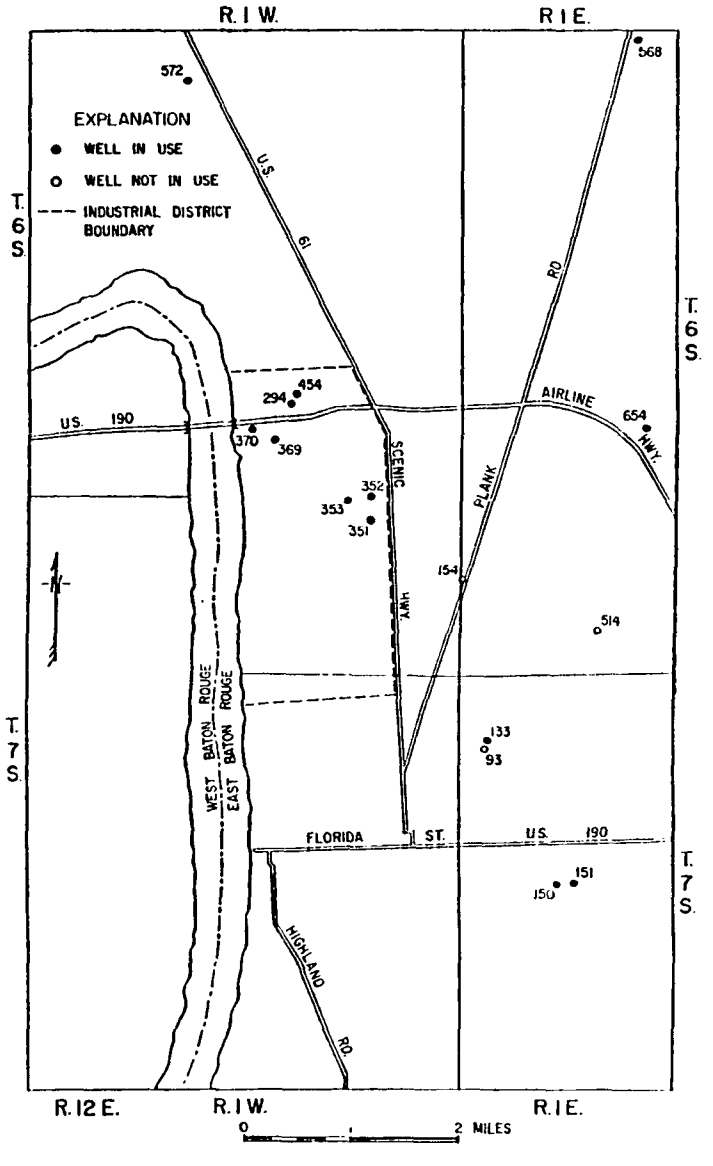

Figure 24. Map showing location of wells screened in the "2,400-foot" sand in and near the Baton Rouge industrial district.

A recovery test was made in well EB-572 (T. 6 S., R. 1 W.). The coefficient of transmissibility computed from the observed data is 97,000 gpd per foot. The thickness of the sand at the well was 163 feet; thus, the coefficient of permeability is 590 gpd per square foot.

Quality of water. Chemical analyses (table 1) of water collected from 7 wells screened in the "2,400-foot" sand indicate the water to be soft, alkaline, and of sodium bicarbonate type and suitable for most purposes. Except for well EB-578A (T. 4 S., R. 1 W.) at Zachary, which yielded water containing 0.86 ppm iron, the total iron in water from the "2,400-foot" sand ranged from 0.04 to 0.30 ppm. The chloride content of the water sampled ranged from 3.2 to 5.8 ppm (table 1); however, electrical logs of oil-test wells in the southern part of the area (pl. 1) show brackish water in this sand. The temperature of water from the "2,400-foot" sand in the project area ranges from 92° to 94°F.

Withdrawals. Withdrawals from the "2,400-foot" sand have decreased from a high of 10.4 mgd in 1956 to 7.7 mgd in the first half of 1959. During the period 1954-59, pumpage for industrial use decreased from 7.5 to 4.4 mgd, whereas the amount used for public supply at Baker, Zachary, and Baton Rouge increased from 2.5 to 3.3 mgd. The relation of pumpage to water level in a well screened in this sand northeast of the industrial district is shown on figure 25.

Effects of pumping. As shown by the records (table 3) for well EB-370 (T. 6 S., R. 1 W.) for the period 1944-59, the long-term water-level decline in the "2,400-foot" sand in the industrial district has been 3.5 feet annually. In April 1959, the reported static water level in this well was 77 feet below land surface. The water levels in well EB-468 (T. 5 S., R. 1 E.), 4 miles northeast of the industrial district, show graphically the effects of regional and local changes in pumping from the "2,400-foot" sand. (See fig. 25.) During the period March 1954 to May 1956 the water level in this well declined at a rate of 6.5 feet per year owing to pumping from wells in the industrial district. Beginning in 1956 pumping from industrial wells decreased

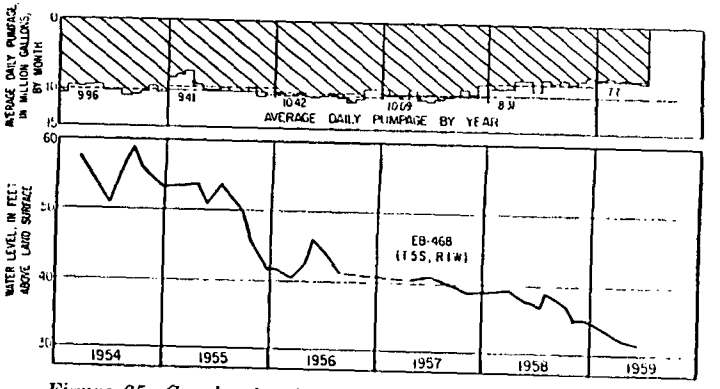

Figure 25. Graphs showing relation of pumpage to water level in a well screened in the "2,400-foot" sand in the Baton Rouge area.

gradually; however, in the early part of 1958, pumping from nearby public-supply wells increased. Along with the reduction in regional pumpage since 1956 has come a decrease in the rate of water-level decline to about 4 feet per year. However, in a 15-month period (April 1958-June 1959) the decline was about 8 feet.

"2,800-FOOT" SAND

Physical properties. The "2,800-foot" sand underlies the project area and includes all fresh-water-bearing sands below the "2,400-foot" sand (pl. 1). In southeastern East Baton Rouge Parish this aquifer is connected with the "2,400-foot" sand. The maximum thickness of the unit occurs in the eastern part of the report area, where three separate sands of the "2,800-foot" aquifer have a combined thickness of 350 feet. In the industrial district this aquifer has two sand units, an upper fresh-water-bearing sand bed about 90 feet thick, and a lower sand bed about 100 feet thick. The quality of water in the lower sand grades from fresh at the top to more mineralized at the bottom. West of the industrial district, the clay bed between the two sands is absent and the lower part of the aquifer contains brackish water, which could locally contaminate large-capacity wells.

The color, yellowish-gray, is similar to that of the shallower Miocene, Pliocene(?), and Pleistocene sands. The

sand grains are poorly sorted, and range in size from fine to coarse, and occasionally to very coarse, sand.

Hydrologic properties. Of the 18 wells screened in the "2,800-foot" sand in the project area (table 3), 17 are in use. At present (1959) 5 industrial wells (EB-534, -548, -560, -628, and -645) are screened in this aquifer. The locations of wells that tap this unit in and near the Baton Rouge industrial district are shown on figure 26. The wells that tap the "2,800-foot" sand flow but they are equipped with pumps in order that additional quantities of water can be obtained. Well EB-700 (T. 6 S., R. 1 E.), 3 miles northeast of the industrial district, had an artesian flow of 900 gpm in 1959. The yields of pumped wells in the industrial district ranged from 1,150 to 1,800 gpm, and averaged 1,500 gpm. Specific capacities of three wells, corrected for pipe friction loss, are 18.5 (EB-534, T. 6 S., R. 1 W.), 27.0 (EB-581, T. 5 S., R. 2 E.), and 58.9 (EB-645, T. 5 S., R. 1 W.) gpm per foot of drawdown (table 2). Wells were not available for pumping tests, and hence the hydraulic characteristics of this sand have not been determined.

Quality of water. The "2,800-foot" sand yields water that is soft, alkaline, and of sodium bicarbonate type. (See table 1.) The total iron content ranged from 0.03 to 0.14 ppm; water in the basal unit of the "2,800-foot" sand is brackish in the industrial district and becomes more mineralized toward the south and west (pl. 1). It has been reported that the chloride content in water from one well (EB-534) increased during the period 1955-59 from 33 to 72 ppm. This slight increase in chloride content is probably the result of the vertical movement of brackish water from the basal part of the "2,800-foot" sand and through the intervening clay layer. As the hydrostatic pressure in the upper part of the "2,800-foot" sand decreases with increased pumping, the quantity of brackish water moving into the upper zone may increase. Temperatures of the water within the industrial district range from 96° to 97°F.

Withdrawals. Pumping from the "2,800-foot" sand has increased from an average of 2.9 mgd in 1954 to 5 mgd in 1959. Over 90 percent of the water pumped is used by in-

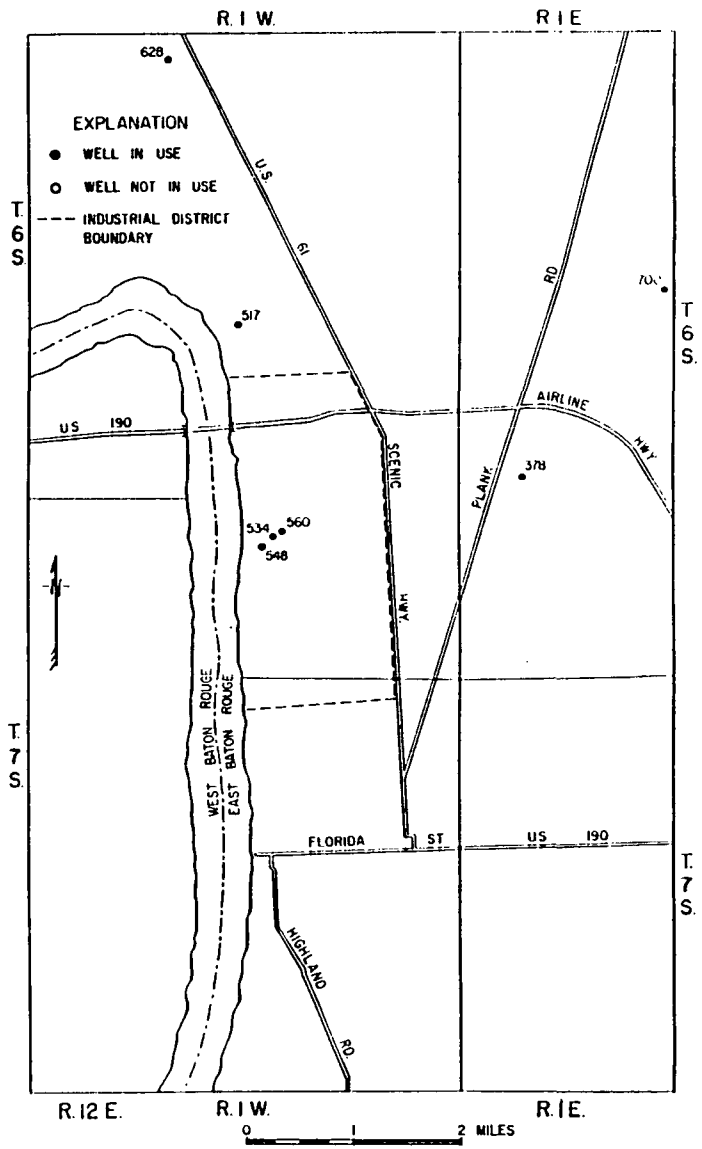

Figure 26. Map showing location of wells screened in the "2,800-foot" sand in and near the Baton Rouge industrial district.

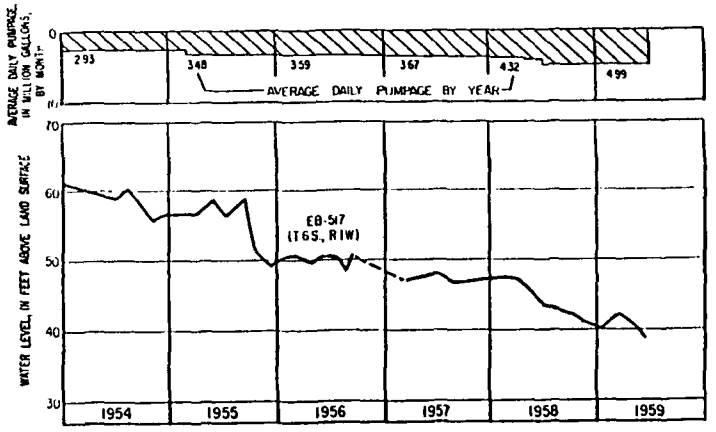

Figure 27. Graphs showing relation of pumpage to water level in a well screened in the "2,800-foot" sand in the Baton Rouge area.

dustries; the remaining 10 percent is used for public supply in Zachary and areas surrounding the city of Baton Rouge.

The relation of pumpage to water-level fluctuations in a well screened in the "2,800-foot" sand near the northern boundary of the industrial district is shown on figure 27. Water from one of three domestic wells in the area (EB-378, T. 6 S., R. 1 E.) is used as a source of heat for a home.

Effects of pumping. Water levels in the "2,800-foot" sand near the northern boundary of the industrial district have declined at a rate of 4 feet per year since 1954. (See fig. 27.) However, static water levels within the industrial district are still above land surface and various quantities of water flow from the wells. As discussed in the section on "Quality of water," the chloride content in water from the "2,800-foot" sand in the industrial district has increased slightly with continued and increased pumping.

WITHDRAWALS AND THEIR EFFECTS

PUMPAGE

As shown by the following table of estimated pumpage for 1953 and the first 6 months of 1959, the average ground-water pumpage has increased by about 56 mgd.

AVERAGE GROUND-WATER PUMPAGE

Gallons per day

Aquifer	1953	1959
Alluvium	Negligible	29,300,000[a]
Shallow Pleistocene deposits	do.	Negligible
"400-" and "600-foot" sand	31,900,000	22,900,000
"800-foot" sand	1,500,000	2,000,000
"1,000-foot" sand	1,700,000	2,000,000
"1,200-foot" sand	2,500,000	18,200,000
"1,500-foot" sand	5,000,000	7,500,000
"1,700-foot" sand	1,400,000	2,000,000
"2,000-foot" sand	14,600,000	24,500,000
"2,400-foot" sand	5,500,000	7,700,000
"2,800-foot" sand	1,000,000	5,000,000
	65,100,000	121,100,000

The demand for additional quantities of ground water during the period 1954-59 is illustrated graphically by figure 28. The pumpage for the purpose of pressure relief at the site of the Port Allen locks amounted to about 28 mgd during 1959. Of the remaining 93 mgd pumped during the first half of 1959, an average of 72 mgd was by industries and 21 mgd was for public supply. Domestic, stock, and irrigation pumping contributed little to the total pumpage and is not included in the total.

The quantity of water pumped from the aquifers and the coefficients of transmissibility of aquifers in the Baton Rouge area are shown on figure 29. On the basis of the Theis nonequilibrium formula (Wenzel, 1942, p. 88) and the assumption that the drawdown in a well screened in an artesian aquifer is constant, the yield from an infinite, homogeneous, and isotropic aquifer is directly proportional to the coefficient of transmissibility. Consequently, the higher the coefficient of transmissibility the larger the potential theoretical yield from the aquifer. As shown, the alluvial deposits have the highest coefficient of

[a] Includes 28 mgd of pumping by the Corps of Engineers, U.S. Army for "pressure relief" at the Port Allen locks.

REFERENCE 13

BATON ROUGE WATER COMPANY
Well Information as of February 1, 1988

Bankston Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
03-BR	# 1	1200'	1206'	1000
	# 2	1200'	1153'	1000
	# 3	2400'	2382'	1000
	# 5	1200'	1168'	1000
	# 6	2400'	2369'	1000
	# 7	2400'	2383'	1000

Cortana Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
13-BR	# 1	1000'	1060'	1000
	# 2	1000'	1216'	1000
	# 3	1700'	1898'	1000
	# 4	2000'	2190'	1000
	# 5	1500'	1548'	1000

Convention Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
10-BR	# 1	2400'	2730'	2000
	# 2	2000'	2230'	1000

Govt. St. Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
12-BR	# 2	2000'& 2600'	2658'	1000
	# 3	1500'	1745'	1000
	# 5	2000'& 2600'	2637'	1000
	# 6	1500'	1755'	1000

Greenridge Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
04-BR	# 2	1000'	985'	1000

Interstate 12

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
18-BR	# 1	400'	555'	1000
	# 2	2400'	2710'	1000

Lafayette Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
09-BR	#14	2000'	2174'	1000
	#15	2000'	2253'	1000

Lula Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
07-BR	#17	1500'	1605'	1000
	#18	1500'	1612'	1000
	#19	1500'	1604'	1000
	#20	1500'	1604'	1000
	#21	2000'	2169'	1000
	#22	1500'	1621'	1000
	#23	1500'	1595'	1000

O.L.O.L. Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
06-BR	# 1	2400'	2585'	1000
	# 2	2000'	2262'	1000

O'Neal Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
16-BR	# 1	1200'	1473'	1000
	# 2	600' & 800'	1090'	1000

N. 45th Street Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
08-BR	# 1	2400'	2596'	1000
	# 2	2000'	2145'	1000
	# 3	1500'	1516'	1000

Robin Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
02-BR	# 1	1500'	1413'	1000
	# 2	2800'	2649'	1000
	# 3	2000'	1934'	1000

South 17th Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
11-BR	# 1	2000'	2295'	1000

N. Sharp Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
05-BR	# 1	1000'	1015'	1000
	# 2	1000'	983'	1000

Ridgecrest Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
15-BR	# 1	1200'	1414'	1000
	# 2	1200'	1441'	1000
	# 3	2400'	2643'	1000

Sherwood Forest Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
14-BR	# 1	1200'	1374'	1000

So. University Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
01-BR	# 3	2800'	2648'	1000

Stanley Aubin Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
20-BR	# 1	1200'	1465'	1000
	# 2	400'	569'	1000

Stumberg Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
21-BR	# 1	400'	574'	1000

Toulon Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
17-BR	# 1	1200'	1465'	1000
	# 2	2400'	2678'	1000

Westminster Pump Station

Map Key	Well No.	Sand	Total Depth	Well Capacity (GPM)
19-BR	# 1	1200'	1490'	1000

Summary of District Pumpage, January-June, 1987

First Quarter	Public Supply	Industry	Total
1987	**59.636**	**68.449**	**128.085**
1986	59.992	62.254	122.246
Second Quarter			
1987	**63.068**	**70.518**	**133.586**
1986	62.155	69.025	131.180

As indicated in table, pumpage totals for the first two quarters of 1987 are running slightly ahead of pumpage for the first two quarters of 1986. Most of the increase is related to expanded production in the industrial sector.

BATON ROUGE WATER COMPANY'S FACILITIES

FACILITY			STREET ADDRESS	LOCATION
BANKSTON P.S.	(1)	*	5744 Maplewood Drive E 10	W side; S of Laca St.
BLUEBONNET TANK			7912 Bluebonnet Lane F 3 G 5	W side; S of Perkins Rd.
CLOVERLAND TANK			11777 Cloverland Avenue H-4	N side at Benefit Dr.
CONVENTION P.S.			130 North 12th Street A 8	E side; B/T Convention St. & N Blvd.
CORTANA EAST P.S.			645 Oak Villa Boulevard F 7	W side; S of Mallway Ave.
CORTANA WEST P.S.			8487 Airline Highway F 8, I 3	E side; S of Florline Blvd.
I GOODWOOD CONTROL/OFFICE			8755 Goodwood Boulevard [illegible]	NE corner at Market Cross Roads
GOVERNMENT SOUTH P.S.			4601 Government Street [illegible]	N side at Mouton Dr.
GOVERNMENT NORTH P.S.			4601 Government Street (Rear) [illegible]	Dead end of Hanson Dr.
GREENRIDGE P.S.	(2)		11087 Greenwell Springs Road E 8, J 15	[illegible] Greenridge Dr. H 10
HIGHLAND TANK			5400 Highland Road [illegible]	SW corner at BenHur Rd.
I-12 P.S.			10438 Daradelle Avenue G 6	S side at dead end; W of church
LAFAYETTE P.S.			118 North 1st Street B 9	E side; B/T N Blvd. & Convention St.
Well Site #14			222 Front Street J 5	E side; N of Convention St.
LAFAYETTE RESERVOIR			131 Lafayette Street B 7	W side; B/T N Blvd. & Convention St.

FACILITY	STREET ADDRESS	LOCATION
LULA WEST P.S./METER SHOP	3016 Jefferson Avenue C 8	S side; Block B/T N 30th & N 31st & Jefferson Ave. & Lula Ave.
Reservoir Site	1655 North 32nd Street	W side; B/T Jefferson Ave. & Lula Ave.
Well Site #17	1703 North 32nd Street C 5	W side; S of Jefferson Ave.
Well Site #18	1715 North 30th Street	W side; S of Jefferson Ave.
Well Site #19	1594 North 32nd Street	E side at Lula Ave.
LULA EAST P.S.	1641 North 35th Street D7	W side; B/T basketball courts & school.
Well Site #23	1731 North Acadian Thruway East C7	W side; S of Washington Ave.
LULA 21 P.S.	1740 North 35th Street D7	E side at dead end
MARGARET TANK	1420 Napoleon Street B6 B7	W side; N of Margaret St.
NORTH 45TH P.S.	675 North 45th Street D8	W side; N of North St.
NORTH SHARP P.S.	3893 North Sherwood Forest Drive H8,H9	W side; N of Toledo Bend Ave. on service road
O'NEAL LANE P.S.	2415 O'Neal Lane ?	E side at Firewood Dr. I 6, J 6
O.L.O.L. P.S.	* 1982 North 4th Street B9	E side; North Dort Ave.
OPERATIONS & MAINTENANCE CENTER	2520 Souter Drive F8	NE corner at S. Choctaw Dr. across tracks

FACILITY	STREET ADDRESS	LOCATION
PERKINS TANK	3831 Perkins Road	E side; N of Balis Dr.
PRESCOTT TANK	3720 Prescott Road	S side at Maple Dr.
RIDGECREST P.S.	12541 Old Hammond Highway	N side; E of Elwick Dr.
ROBIN P.S.	1745 Robin Street	NE corner at Thelma St.
SHERWOOD FOREST P.S.	12045 Mollylea Drive	N side; E of Westbrook Dr.
SOUTH 17TH P.S./TANK	286 South 17th Street	W side at Louisiana Ave.
SOUTHERN UNIVERSITY P.S.	S.U. Campus, Street K	N side at end of Street K
STANLEY AUBIN P.S.	10731 Stanley Aubin Lane	N side at Weiner Creek Dr.
STUMBERG P.S.	5344 Stumberg Lane	W side; S of Jacks Bayou Bridge
TEXAS TANK	2828 Thomas H. Delpit Drive	W side; B/T East Garfield St. & East Roosevelt St.
TOULON P.S.	2617 Toulon Drive	E side; in curve N of St. Tropez Avenue
WESTMINSTER P.S.	8800 Blk of Jefferson Highway	S side at Drusilla Lane & I-12

REFERENCE 14

RECORD OF COMMUNICATION

TYPE: Telephone Call **DATE:** 02-11-92 **TIME:** 1:59 and 3:25 p.m.

TO: Mr. Mitchell and Liz Hudson
Parish Water Company
504-261-0104

FROM: Jeffrey E. Patterson JEP
ICF Technology, Inc.
Dallas, Texas
214-979-3946

SUBJECT: Parish Water Company Wells

SUMMARY OF COMMUNICATION:

Mr. Mitchell and Ms. Hudson told me that the Parish Water Company has a total of 21 wells, three of which are located in the Scenic Highway area. One is on Scenic Highway at the corner of Old Rafemeyer Road. It is 2000 feet deep. A 1300 foot well is located on Greely Road north of Old Rafemeyer Road. A closed well is located on Rafemeyer Road. A third active well is located across Thomas Road from the zoo on Layton Avenue, which is 2400 feet deep. They serve the Baton Rouge Zoo and Alsen Heights, but do not serve The State Industrial School for Boys(at least not under that name). Ther water is mixed in the system. They serve a population of 22,100 people. Their boundaries in the south are Baton Rouge city limits and in the north they are Springfield Road. They do not serve the city of Baker.

REFERENCE 15

RECORD OF COMMUNICATION

TYPE: Telephone Call **DATE:** 02-11-92 **TIME:** 1:30 p.m.

TO: Leroy White
Assisstant Superintendent
City of Baker Water Utilities
504-775-5584

FROM: Jeffrey E. Patterson JEP
ICF Technology, Inc.
Dallas, Texas
214-979-3946

SUBJECT: City of Baker Water Wells

SUMMARY OF COMMUNICATION:

Mr. White described the City of Baker wells as; one on Groom Road, East of Mcque at 2300 feet, one on Debra Road at 2400 feet, one on Mississippi road at 2400 feet and one on Levey Lane at 2400 feet deep. The system serves about 12,000 people within the City of Baker. There are some more connections outside the city limites, but he did not know how many they served.

REFERENCE 16

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303600 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303301091104401	EXXON CHEMICAL	- 40	MTF1	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	068	06S	01W	PLUGGED	1280 PA	4X2.50 STEEL	2.50 1240-1280	0915	W
303334091120301	MUNSON, W	- 148		"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	057	06S	01W	DOMESTIC	1349 --	2 METAL	2 1321-1349	1035	D
303421091123001	ALSEN WATER CO	- 149	1	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	051	05S	01W	PUBLIC SUPPLY	1280 PA	3 STEEL		1238	D
303358091094401	EB REC PARK COM	- 172	RYAN	"400-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	054	05S	01W	PUBLIC SUPPLY	239 PA	4X2.50 METAL	2.50 218-239	1042	D Q W
303522091100201	BAKER, LA	- 309		"2000-FOOT" SAND OF BATON ROUGE AREA EBERHART	039	05S	01W	ABANDONED	1438 --	4X2.50 METAL	2.50 1378-1438	0320	D Q
303215091113101	BATON ROUGE WW	- 310	WITT	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	074	06S	01W	PLUGGED	1321 PA	4X2.50 METAL	2.50 1281-1321	0726	Q W
303259091121101	EBR - DPW	- 313	INCI	"400-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	068	06S	01W	PUBLIC SUPPLY	391 PA	3 METAL	3 381-391	0240	D W
303713091122501	CARNEY, J	- 321		"2000-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	089	05S	01W	DOMESTIC	1460 --	2.50 METAL	1440-1460	0637	D Q W
303539091104401	LELAND COLLEGE	- 345A		"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	039	05S	01W	ABANDONED	1224 --	4X2.50 METAL	2.50 1161-1224	0523	D W
303539091104402	LELAND COLLEGE	- 345B		"2400-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	039	05S	01W	ABANDONED	1949 --	4X2.50 METAL	2.50 1889-1949	0443	D Q W
303539091115901	HAUSE, W	- 346		"2000-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	076	06S	01W	DOMESTIC	1604 --	2 METAL	2 1584-1604	0637	D Q W
303248091105301	EXXON CO USA	- 358	MTF2	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	068	06S	01W	PLUGGED	1302 PA	8X6 STEEL	6 1221-1302	0341	D W
303552091121101	EVANS, H	- 380		"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	076	05S	01W	DOMESTIC	1122 --	2 METAL	2 1102-1122	0637	D W
303606091120801	MCVEA, W	- 383		"600-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	076	05S	01W	ABANDONED	264 --	2 METAL			Q
303606091120802	MCVEA, W	- 384		"2400-FOOT" SAND OF BATON ROUGE AREA EBERHART	076	05S	01W	DOMESTIC	1916 --	6X4 STEEL	4 1876-1916	1144	DMQ W
303734091123301	DECKER, W	- 385		"600-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	071	05S	01W	ABANDONED	271 --	2			W
303735091123401	DECKER, W	- 386		"600-FOOT" SAND OF BATON ROUGE AREA MCDERMOTT F	071	05S	01W	ABANDONED	276 --	2 METAL	2 262-276	1144	W

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303500 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303735091123402	DECKER, W	- 393		"600-FOOT" SAND OF BATON ROUGE AREA MCDERMOTT F	071	05S	01W	OBSERVATION	370 -Q	2 METAL	2 356-370	1244	M W
303506091121401	LA TRAINING INS	- 432		"2400-FOOT" SAND OF BATON ROUGE AREA EBERHART	086	05S	01W	PUBLIC SUPPLY	1942 -T	8 STEEL	6 1882-1942	0346	DMQ W
303215091113102	BATON ROUGE WW	- 456		"2000-FOOT" SAND OF BATON ROUGE AREA EBERHART	074	06S	01W	PLUGGED	1895 PA	 STEEL		0147	MQ
303518091123401	MCVEA	- 457		"1200-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	086	05S	01W	DOMESTIC	913 --	4 METAL		0847	M W
303440091125701	CAPITAL WTR COR	- 460		"600-FOOT" SAND OF BATON ROUGE AREA CLEMARD	044	05S	01W	ABANDONED	460 --	4 METAL		0847	Q W
303453091125201	ACME BRICK	- 464		"400-FOOT" SAND OF BATON ROUGE AREA CLEMARD	044	05S	01W	PLUGGED	280 PA	4 STEEL		0947	W
303248091105401	EXXON CO USA	- 481	MTF3	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	069	06S	01W	INDUSTRIAL	1325 29	8X6 STEEL		0848	M
303403091100201	EB REC PARK COM	- 502		"400-FOOT" SAND OF BATON ROUGE AREA COASTAL WTR	053	05S	01W	ABANDONED	412 -D	6X2 STEEL	2 372-412	1242	D
303451091125001	ACME BRICK	- 515	2	"400-FOOT" SAND OF BATON ROUGE AREA UNKNOWN				OTHER	280 -I	4 STEEL		1958	
303729091123401	DECKER, W	- 539		"2800-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	071	05S	01W	DOMESTIC	2590 --	10X8	8 2550-2590	0452	E MQ W
303309091120901	DELTECH CORP	- 561	1	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	056	06S	01W	INDUSTRIAL	1361 28	10X8X6 STEEL	6 1291-1361	0953	D Q W
303310091120701	DELTECH CORP	- 572	2	"2800-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	056	06S	01W	INDUSTRIAL	2540 28	12X10X9 STEEL	 MULTIPLE	0255	EDMQ PW
303421091123002	PARISH WATER CO	- 585	2	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	051	05S	01W	PUBLIC SUPPLY	1331 PA	6X4 STEEL	4 1291-1331	0556	ED Q W
303339091121401	ALLIED CHEM	- 589	2	"1200-FOOT" SAND OF BATON ROUGE AREA EBERHART	049	05S	01W	PLUGGED	1006 PA	12 STEEL	12 880-1006	0456	EDMQ W
303322091121701	LA CHEM POLY	- 628	1	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	057	06S	01W	INDUSTRIAL	2575 28	12X9 STEEL	9 2490-2575	0357	EDMQ W
303343091122501	PAXON POLYMER	- 629	1	"1200-FOOT" SAND OF BATON ROUGE AREA EBERHART	048	05S	01W	INDUSTRIAL	1025 28	12X9 STEEL	12 870-1025	0257	DMQ W
303803091115901	BARBER, F	- 643		"2800-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	063	05S	01W	IRRIGATION	2250 --	10X6 STEEL	6 2150-2250	1057	ED W

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303500 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO	
303803091115902	BARBER, F	- 644		"400 & 600 FOOT" SANDS OF BATON ROUGE AREA UNKNOWN	063	05S	01W	ABANDONED	350 --	4 METAL		0957	ED	W
303458091140001 303500 911405	UNION TANK CAR -REV. COORDS.	- 645		"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	044	05S	01W	INDUSTRIAL	2579 99	12X8 STEEL	8 2479-2579	1157	ED Q	W
303421091121001	EB SCHOOL BOARD	- 651	ALSE	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	051	05S	01W	ABANDONED	1311 --	6X3 METAL	3 1251-1311	0755	D Q	W
303332091130201	BR PORT COMM	- 655		"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	058	06S	01W	PUBLIC SUPPLY	1341 -C	12 STEEL	1221-1341	0858	E Q	W
303408091113201	ALSEN WATER CO	- 659	2	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	051	06S	01W	PUBLIC SUPPLY	1295 -P	8X6 STEEL	6 MULTIPLE	1058	EDMQ	W
303558091143201	KAISER ALUMINUM	- 675		"1000-FOOT" SAND OF BATON ROUGE AREA AIRHART	083	05S	01W	ABANDONED	720 --	2 METAL	2 710-720	0556	E	W
303350091100901	EB REC PARK COM	- 685		"1700-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	053	06S	01W	OBSERVATION	1640 -W	6X3 STEEL	3 1580-1640	0655	ED Q	W
303327091104401	STUPP CORP	- 686	A	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	002	06S	01W	INDUSTRIAL	1346 33	8X6X6 STEEL	6 MULTIPLE	0359	ED Q	
303513091095901	EB SCHOOL BOARD	- 691	BAKE	"2000-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	041	05S	01W	ABANDONED	1649 --		1629-1649	0839	D	W
303532091095801	BAKER, LA	- 698	MISS	"2800-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	039	05S	01W	PUBLIC SUPPLY	2395 -P	12X9 STEEL	9 2329-2395	0752	EDMQ	W
303313091120201	DELTECH CORP	- 723	3	"2800-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	056	06S	01W	INDUSTRIAL	2525 28	16X12X10 STEEL	9 MULTIPLE	0760		W
303319091102301	PARISH WATER CO	- 729	BEECH	"2000-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	054	06S	01W	PUBLIC SUPPLY	1711 PA	6X4 STEEL	4 1661-1711	1259	D Q	W
303448091122401	SOUTHERN UNIV	- 742	A	"1700-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	043	05S	01W	DOMESTIC	1620 --	4X2.50 METAL	2.50 1600-1620	0859	D	W
303450091112801	SOUTHERN UNIV	- 743	B	"1700-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	042	05S	01W	ABANDONED	1641 --	6X3 METAL	3 1611-1641	0859	ED	W
303647091095301	EBR - DPW	- 744		"1200-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	013	05S	01W	DOMESTIC	887 PA	4X3 METAL	3 856-887	0358	D	W
303507091143401	SCHUYLKILL META	- 748	1	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	044	05S	01W	INDUSTRIAL	1277 33	6X4 STEEL	4 1227-1277	0360	D	W
303157091120601	EBR - DPW	- 812	1	"2000-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	074	06S	01W	OTHER	2002 PA	13X8X6 STEEL	6 1910-2002	0561	ED	W

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303600 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303356091095301	LA W R R INST	- 827	GRWD	"600-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	054	05S	01W	OBSERVATION	370 -W	2 METAL	2 364-370	0967	E W
303311091104801	EXXON PLASTICS	- 859	PL01	"2800-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	068	06S	01W	INDUSTRIAL	2440 28	18X12X8 STEEL	8 2340-2440	0367	ED W
303311091105001	EXXON PLASTICS	- 860	PL02	"2800-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	068	06S	01W	INDUSTRIAL	2435 28	18X12X8 STEEL	8 2334-2435	0568	W
303342091111901	PARISH WATER CO	- 867	ST.IRM	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS BROS	035	05S	01W	PUBLIC SUPPLY	1368 PA	4X5 OTHER	4 1318-1368	0964	D W
303404091124001	ROLLINS ENV SER	- 886		"600-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	048	05S	01W	INDUSTRIAL	384 99	10X6 STEEL	6 344-384	0870	ED Q W
303512091125901	U S GEOL SURVEY	- 898		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	044	05S	01W	OBSERVATION	101 -O	1.25 METAL		1072	D Q W
303645091133301	REED, C.	- 915		"400-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	077	05S	01W	DOMESTIC	265 --	2 METAL	2 255-265	0959	
303746091140301	SAMUELS, B	- 916		"400-FOOT" SAND OF BATON ROUGE AREA WATTS	068	05S	01W	OBSERVATION	200 -O	2 METAL	2 190-200	0956	W
303704091102201	U S GEOL SURVEY	- 923		"600-FOOT" SAND OF BATON ROUGE AREA HERRINGTON	013	06S	01W	OBSERVATION	361 -O	2X2 PLASTIC	2 351-361	0374	ED W
303445091125601	PROOF-COAT	- 937		"400-FOOT" SAND OF BATON ROUGE AREA HERRINGTON	044	05S	01W	OTHER	336 -F	6 METAL	6 316-336	0967	W
303327091121901	USS REALTY	- 950	2	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	057	06S	01W	INDUSTRIAL	2559 28	8X8 STEEL	8 2482-2559	0564	DM W
303333091120801	LA CHEM POLY	- 964	3	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	057	06S	01W	INDUSTRIAL	2534 28	16X10 STEEL	10 MULTIPLE	0268	D W
303322091120301	LA CHEM POLY	- 965	4	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	056	06S	01W	INDUSTRIAL	2547 28	16X10X10 STEEL	 MULTIPLE	0768	D W
303313091120901	DELTECH CORP	- 966	4	"2800-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	056	06S	01W	INDUSTRIAL	2471 28	18X12X8 STEEL	8 2361-2471	0871	DM PW
303506091143401	SCHUYLKILL META	- 967	2	"2400-FOOT" SAND OF BATON ROUGE AREA SUMMERS BROS	044	05S	01W	INDUSTRIAL	1920 33	8X4 STEEL	4 1870-1920	0570	D W
303645091135301	GRANT CHEMICAL	- 969	1	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	079	05S	01W	INDUSTRIAL	1130 28	6X6 STEEL	6 1070-1130	1068	EDMQ
303646091135601	GRANT CHEMICAL	- 970	2	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	079	05S	01W	INDUSTRIAL	1132 28	8X6X6 STEEL	6 1072-1132	0372	DMQ

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WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
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WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303500 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303335091122201	PAXON POLYMER	- 977	3	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	057	06S	01W	INDUSTRIAL	1340 28	18X12 STEEL	12 1250-1340	0568	D W
303341091122501	PAXON POLYMER	- 978	4	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	048	05S	01W	INDUSTRIAL	2540 28	16X10X10 STEEL	10 2430-2540	0376	D W
303456091142801	REYNOLDS METALS	- 979	2	"1500-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	044	05S	01W	INDUSTRIAL	1300 PA	12X6 STEEL	6 1229-1299	0970	DM PW
303504091142801	REYNOLDS METALS	- 980	1	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	044	05S	01W	INDUSTRIAL	1270 PA	12X6 STEEL	6 1208-1268	0762	D W
303326091114801	EXXON CHEMICAL	- 984	HERC	"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	056	06S	01W	INDUSTRIAL	1365 28	24X12X7 STEEL	7 MULTIPLE	0868	D W
303333091104301	STUPP CORP	- 985	8	"1500-FOOT" SAND OF BATON ROUGE AREA SUMMERS, D. K.	002	06S	01W	INDUSTRIAL	1346 PA	8X6	MULTIPLE	1969	
303306091100901	PARISH WATER CO	- 993	GORE	"1500-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	069	06S	01W	PUBLIC SUPPLY	1385 PA	4 STEEL		0913	E W
303251091115001	U S GEOL SURVEY	-1000	TEST	"2800-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	069	06S	01W	OBSERVATION	2926 -O	10X2.50 METAL	2.50 2916-2926	1277	EDMQ W
303453091122801	LA TRAINING INS	-1001	2	"2400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	043	05S	01W	PUBLIC SUPPLY	1926 -T	10X6X6 STEEL	6 MULTIPLE	1077	ED W
303311091122401	DELTECH CORP	-1002	5	"2800-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	057	06S	01W	INDUSTRIAL	2570 28	16X12X8 STEEL	8 MULTIPLE	1177	DM W
303502091143401	SCHUYLKILL META	-1020	3	"2400 & 2800 FOOT" SANDS OF BATON ROUGE AREA SUMMERS, D. K.	044	05S	01W	INDUSTRIAL	2441 33	10X6X4 STEEL	MULTIPLE	0879	ED W
303356091103301	CITY CONCRETE	-1023		SHALLOW SANDS OF BATON ROUGE AREA SUMMERS (TERRY)	053	05S	01W	INDUSTRIAL	170 99	6 PLASTIC	4 140-170	0380	D Q W
303421091123003 303424 911229	ALSEN WATER CO -REV. COORDS.	-1027	3	"2400-FOOT" SAND OF BATON ROUGE AREA SUMMERS BROS	051	06S	01E	PUBLIC SUPPLY	1926 -R	9X7 STEEL	6 1883-1926	0978	W
303457091140001 303501 911405	UNION TANK CAR -REV. COORDS.	-1034	2	"2800-FOOT" SAND OF BATON ROUGE AREA EBERHART	044	05S	01W	INDUSTRIAL	2608 99	10X6 STEEL	6 MULTIPLE	0182	D W
303456091142802	REYNOLDS METALS	-1048	3	"1500-FOOT" SAND OF BATON ROUGE AREA LAYNE (LA)	044	05S	01W	INDUSTRIAL	1288 33	12X6X6 STEEL	6 1218-1288	0183	EDM W
303454091143101	PETRO PROCESSOR	-1078		"400-FOOT" SAND OF BATON ROUGE AREA UNKNOWN	044	05S	01W	INDUSTRIAL	230 PA	4 PLASTIC	210-230		Q W
303227091112801	U S GEOL SURVEY	-1081		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	074	06S	01W	OBSERVATION	77 -O	2 METAL	2 75-77	1084	ED Q W

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303339091124901	U S GEOL SURVEY	-1082		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	048 05S 01W	OBSERVATION	75 -0	2 PLASTIC	2 71-75	1184	ED Q W
303512091125902	U S GEOL SURVEY	-1086		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	044 05S 01W	OBSERVATION	25 -0	2 PLASTIC	2 15-25	0185	D Q W
303641091134601	U S GEOL SURVEY	-1087		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	079 05S 01W	OBSERVATION	44 -0	2 PLASTIC	2 34-44	0185	D Q W
303444091131501	U S GEOL SURVEY	-1088		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	044 05S 01W	OBSERVATION	30 -0	2 PLASTIC	2 20-30	0185	D Q W
303442091131601	U S GEOL SURVEY	-1089		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	044 05S 01W	OBSERVATION	20 -0	2 PLASTIC	2 9-19	0185	D Q W
303331091101801	U S GEOL SURVEY	-1093		SHALLOW SANDS OF BATON ROUGE AREA U.S.G.S.	053 06S 01W	OBSERVATION	36 -0	2 PLASTIC	2 26-36	0185	D Q W
303458091143501	NPC SERVICES	-1097	BRW1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	RECOVERY	42 --	4 STEEL	4 37-42	0385	D W
303448091142901	NPC SERVICES	-1098	BRW2	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	RECOVERY	42 PA	4 STEEL	4 27-42	0485	D W
303447091143001	NPC SERVICES	-1099	BRW3	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	RECOVERY	63 PA	4 STEEL	4 53-63	0485	D W
303502091145401	NPC SERVICES	-1100	SDG1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	73 --	4 STEEL	4 63-73	0185	D W
303449091143801	NPC SERVICES	-1101	SDG2	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	MONITOR	78 --	4 STEEL	4 68-78	0185	D W
303444091143601	NPC SERVICES	-1102	SDG3	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	045 05S 01W	MONITOR	80 --	4X4 STEEL	4 70-80	0185	D W
303444091142301	NPC SERVICES	-1103	SDG4	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	045 05S 01W	MONITOR	82 --	4X4 STEEL	4 72-82	0185	D W
303502091144001	NPC SERVICES	-1104	SUG1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	109 --	4X4 STEEL	4 104-109	0285	D W
303454091142801	NPC SERVICES	-1105	SUG2	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	114 --	4X4 STEEL	4 104-114	0285	D W
303518091142101	NPC SERVICES	-1106	SB-2	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	27 PA	2 PLASTIC	2 17-27	0585	ED W
303517091141501	NPC SERVICES	-1107	SB-3	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	119 PA	2 PLASTIC	2 109-119	0585	ED W

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303510091140301	NPC SERVICES	-1108	SB-4	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	29 PA	2 PLASTIC	2 24-29	0585	ED	W
303518091140701	NPC SERVICES	-1109	SB-5	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	33 PA	2 PLASTIC	2 28-33	0585	ED	W
303513091142801	NPC SERVICES	-1110	VB-1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	106 --	4 STEEL	4 96-106	0785	ED	W
303515091142201	NPC SERVICES	-1111	VB3A	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	19 PA	2 PLASTIC	2 14-19	0785	ED	
303513091141301	NPC SERVICES	-1112	VB-6	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	36 PA	2 PLASTIC	2 31-36	0685	ED	W
303511091140801	NPC SERVICES	-1113	VB-7	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	122 PA	2 PLASTIC	2 117-122	0685	ED	W
303514091140801	NPC SERVICES	-1114	VB-8	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	30 PA	2 PLASTIC	2 25-30	0685	ED	W
303509091140101	NPC SERVICES	-1115	VB-9	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	112 --	4 STEEL	4 102-112	0785	ED	W
303513091140001	NPC SERVICES	-1116	VB10	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	PIEZOMETER	27 PA	2 PLASTIC	2 22-27	0685	ED	W
303519091140501	NPC SERVICES	-1117	VB14	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	35 PA	2 PLASTIC	2 25-35	0685	ED	W
303520091140101	NPC SERVICES	-1118	VB15	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	116 PA	2 PLASTIC	2 111-116	0785	ED	W
303520091140102	NPC SERVICES	-1119	V15A	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	95 PA	2 PLASTIC	2 92-95	0785	ED	W
303521091140901	NPC SERVICES	-1120	VB16	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	32 PA	2 PLASTIC	2 27-32	0685	ED	W
303518091141601	NPC SERVICES	-1121	VB19	SHALLOW SANDS OF BATON ROUGE AREA GDC	044 05S 01W	PIEZOMETER	104 PA	2 PLASTIC	2 99-104	0785	ED	W
303517091141301	NPC SERVICES	-1122	VB20	"400-FOOT" SAND OF BATON ROUGE AREA POPE	044 05S 01W	PIEZOMETER	285 PA	2 PLASTIC	2 275-285	0785	ED	W
303521091131001	NPC SERVICES	-1124	SDG1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	103 --	4X4 STEEL	4 98-103	1284	ED	W
303516091131101	NPC SERVICES	-1125	SDG2	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	108 --	4X4 STEEL	4 98-108	0485	ED	W

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303512091130901	NPC SERVICES	-1126	SDG3	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	86 --	4X4 STEEL	4 76-86	0285	ED W
303511091130601	NPC SERVICES	-1127	SDG4	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	94 --	4 STEEL	4 74-94	0185	ED W
303521091130701	NPC SERVICES	-1128	SUG1	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	107 --	4X4 STEEL	4 102-107	1284	ED W
303513091130001	NPC SERVICES	-1129	SUG2	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	044 05S 01W	MONITOR	115 --	4X4 STEEL	4 100-115	0285	ED W
303522091132301	KAISER ENERGY	-1131		"1200-FOOT" SAND OF BATON ROUGE AREA GUICHARD	044 05S 01W	RIG SUPPLY	949 --	4 STEEL	4 929-949	0985	D W
303448091141701	NPC SERVICES	-1140	BM5D	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	MONITOR	215 PA	2X2 STEEL	2 185-215	1284	D W
303448091141702	NPC SERVICES	-1141	BM55	SHALLOW SANDS OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	MONITOR	154 PA	2 STEEL	2 129-154	1284	DM W
303507091130602	NPC SERVICES	-1142	DDG1	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	OBSERVATION	420 -0	6 ROCK	6 MULTIPLE	0285	DM W
303506091130401	NPC SERVICES	-1143	DDG2	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	OBSERVATION	410 -0	12X4 STEEL	4 MULTIPLE	0185	DM W
303520091130901	NPC SERVICES	-1144	DDG1	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	MONITOR	340 --	12X4 STEEL	4 MULTIPLE	0185	D W
303438091143701	NPC SERVICES	-1145	DDG1	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	045 05S 01W	MONITOR	285 --	4 STEEL	4 MULTIPLE	0285	D W
303437091141801	NPC SERVICES	-1146	DDG2	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	045 05S 01W	OBSERVATION	330 -0	6 STEEL	6 MULTIPLE	0185	D W
303452091142601	NPC SERVICES	-1147	DUG1	"400-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	MONITOR	406 --	4 STEEL	4 MULTIPLE	0285	D W
303455091141701	NPC SERVICES	-1152	1	"1500-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	044 05S 01W	INDUSTRIAL	1231 99	6X4X4 STEEL	4 1210-1231	0587	D W
303418091123601	ROLLINS ENV SER	-1153	2	"1200-FOOT" SAND OF BATON ROUGE AREA STAMM-SCHEELE	048 05S 01W	INDUSTRIAL	977 99	16X10 STEEL	10 825-977	0987	ED Q PW
303538091150901	KAISER ENERGY	-1154	KA 1	"1200-FOOT" SAND OF BATON ROUGE AREA GRINER	044 05S 01W	RIG SUPPLY	975 PA	4 STEEL	4 912-975	0486	D W
303502091142401	REYNOLDS METALS	-1155		"1500-FOOT" SAND OF BATON ROUGE AREA EBERHART	044 05S 01W	INDUSTRIAL	1296 29	12X8 STEEL	8 1215-1296	0887	ED W

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303511091141601	NPC SERVICES	-1166	DDG1	"400-FOOT" SAND OF BATON ROUGE AREA					300	4	4	1287	ED	W
				WARE LIND	044	05S	01W	MONITOR	--	STEEL	280-300			
303509091140301	NPC SERVICES	-1167	DDG2	"400-FOOT" SAND OF BATON ROUGE AREA					300	4	4	1287	ED	W
				WARE LIND	044	05S	01W	MONITOR	--	STEEL	280-300			
303521091141601	NPC SERVICES	-1168	DUG1	"400-FOOT" SAND OF BATON ROUGE AREA					300	4	4	1287	ED	W
				WARE LIND	044	05S	01W	MONITOR	--	STEEL	280-300			
303327091114801	EXXON CHM RESIN	-1171		AQUIFER CODE NOT ASSIGNED					445	10X6	6	0285	EDMQ	W
				LAYNE (LA)	056	06S	01W	INDUSTRIAL	28	STEEL	420-445			
303451091125301	ANTON PLASTICS	-1184		"400-FOOT" SAND OF BATON ROUGE AREA					195	4	4	0588	D	W
				LAMBERT'S	044	05S	01W	INDUSTRIAL	99	PLASTIC	175-195			
303243091114001	NAQUIN, MICHEAL	-1213		SHALLOW SANDS OF BATON ROUGE AREA					220	4	4	0489	D	W
				GILL (JACK)	073	06S	01W	PUBLIC SUPPLY	-C	PLASTIC	200-220			
303818091135401	TRI LAKES	-1225		"600-FOOT" SAND OF BATON ROUGE AREA					320	10		1968		
				MORRISON, J. L.	064	05S	01W	OTHER	-I					
303818091135402	TRI LAKES	-1229		"400-FOOT" SAND OF BATON ROUGE AREA					200	6	6	1290	D	W
				LAMBERT'S	064	05S	01W	OTHER	-Z	PLASTIC	170-200			
303612091122001	S LA PRODUCTION	-5001Z	CRM1	"400-FOOT" SAND OF BATON ROUGE AREA					360			0779		
				RIG WATER	078	05S	01W	RIG SUPPLY	PA					
303509091125401	CHEVRON	-5021Z	KAI1	"400-FOOT" SAND OF BATON ROUGE AREA					285			0482		
				BROWN, H.	044	05S	01W	RIG SUPPLY	PA					
303747091113501	MARTIN EXPLORA	-5022Z	JUB1	"400-FOOT" SAND OF BATON ROUGE AREA					205			0182		
				BROWN, H.	058	05S	01W	RIG SUPPLY	PA					
303444091111301	CELERON OIL-GAS	-5031Z	S/L2	"1000-FOOT" SAND OF BATON ROUGE AREA					920			0181		
				RIG WATER	041	05S	01W	RIG SUPPLY	PA					
303720091114201	MARTIN EXPLORA	-5033Z	ONL1	"400-FOOT" SAND OF BATON ROUGE AREA					250			0381		
				RIG WATER	010	05S	01W	RIG SUPPLY	PA					
303438091140501	MARTIN EXPLORA	-5034Z	EWL2	"400-FOOT" SAND OF BATON ROUGE AREA					336			0782		
				GUICHARD	045	05S	01W	RIG SUPPLY	PA					
303558091144201	KAISER ALUMINUM	-5093Z		UPLAND TERRACE DEPOSITS					105			1278		
				UNKNOWN				PLUGGED	PA					
303522091133201	KAISER ENERGY	-5098Z	KEG1	SHALLOW SANDS OF BATON ROUGE AREA					205	4	4	0584	D	W
				BROWN, H.	044	05S	01W	RIG SUPPLY	PA	STEEL	165-185			
303558091143202	KAISER ALUMINUM	-5103Z		SHALLOW SANDS OF BATON ROUGE AREA					58					
				UNKNOWN	083	05S	01W	PLUGGED	PA					

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303600 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	TOWN SECT	SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO	
303805091134601	SIERRA PROD	-5115Z	MA 1	SHALLOW SANDS OF BATON ROUGE AREA					150	4	4	0185	D	
				RIG WATER	005	05S	01W	RIG SUPPLY	--	STEEL	120-150			
303353091131301	ROLLINS ENV SER	-5120Z	-15A	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					40	2	2	0784		
				SOIL TESTING	048	05S	01W	MONITOR	--	PLASTIC	33-38			
303353091131302	ROLLINS ENV SER	-5121Z	-15B	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					64	2	2	0784		
				SOIL TESTING	048	05S	01W	MONITOR	--	PLASTIC	57-62			
303653091114201	CELERON OIL-GAS	-5142Z	JWD1	"1000-FOOT" SAND OF BATON ROUGE AREA					830	4	4	0884	D	
				RIG WATER	072	05S	01W	RIG SUPPLY	PA	PLASTIC	790-830			
303435091130201	ROLLINS ENV SER	-5188Z	9C-R	SHALLOW SANDS OF BATON ROUGE AREA					136	4	4	1285	D	
				WARE LIND	048	05S	01W	MONITOR	--	PLASTIC	126-136			
303309091103301	EXXON PLASTICS	-5201Z	MW A	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					31	4	4	0186	D	W
				BURMAH	054	06S	01W	MONITOR	--	PLASTIC	26-31			
303304091104801	EXXON PLASTICS	-5202Z	MW B	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					31	4	4	0186	D	W
				BURMAH	069	06S	01W	MONITOR	--	PLASTIC	26-31			
303303091104101	EXXON PLASTICS	-5203Z	MW-C	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					31	4	4	0186	D	W
				BURMAH	054	06S	01W	MONITOR	--	PLASTIC	20-31			
303746091124901	DANT OPERATING	-5206Z	WGD1	"400-FOOT" SAND OF BATON ROUGE AREA					221	4	4	0286	D	W
				GUICHARD	071	05S	01W	RIG SUPPLY	PA	PLASTIC	201-221			
303746091124902	DANT OPERATING	-5207Z	WGD1	"400-FOOT" SAND OF BATON ROUGE AREA					301	4	4	0386	D	W
				GUICHARD	071	05S	01W	RIG SUPPLY	PA	PLASTIC	181-301			
303407091125801	ROLLINS ENV SER	-5212Z	9C	SHALLOW SANDS OF BATON ROUGE AREA					130			0286		
				EUSTIS	048	05S	01W	PLUGGED	PA					
303521091130401	NPC SERVICES	-5213Z	GM-1	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					34			0781		
				GERAGHTY	044	05S	01W	MONITOR	PA					
303513091103002	NPC SERVICES	-5214Z	GM2D	SHALLOW SANDS OF BATON ROUGE AREA					104			0781		
				GERAGHTY	044	05S	01W	MONITOR	PA					
303513091130003	NPC SERVICES	-5215Z	GM2S	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					37			0781		
				GERAGHTY	044	05S	01W	MONITOR	PA					
303507091130001	NPC SERVICES	-5216Z	GM-3	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					21			0781		
				GERAGHTY	044	05S	01W	MONITOR	PA					
303448091143701	NPC SERVICES	-5217Z	BL-2	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					26			1281		
				UNDERGROUND	044	05S	01W	MONITOR	PA					
303445091143601	NPC SERVICES	-5218Z	BL-5	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT					33			1181		
				UNDERGROUND	044	05S	01W	MONITOR	PA					

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303500 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303445091143602	NPC SERVICES	-5219Z	GM-7	S.E. LA. AQ. SYSTEM GERAGHTY	044	SURFICIAL 05S	CONFINING UNIT 01W	MONITOR	49 PA			0581	
303448091143801	NPC SERVICES	-5220Z	GM8D	S.E. LA. AQ. SYSTEM GERAGHTY	044	SURFICIAL 05S	CONFINING UNIT 01W	MONITOR	49 PA			0581	
303442091144101	NPC SERVICES	-5221Z	P-16	SHALLOW SANDS OF BATON ROUGE AREA CAPOZZOLI	045	 05S	 01W	MONITOR	98 PA			0882	
303305091105101	EXXON PLASTICS	-5226Z	MW10	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	25 --	4 PLASTIC	4 15-25	0386	D W
303304091105501	EXXON PLASTICS	-5227Z	MW11	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	30 --	4 PLASTIC	4 20-30	0386	D W
303306091105501	EXXON PLASTICS	-5228Z	MW12	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	27 PA	4 PLASTIC	4 17-27	0386	D W
303308091105401	EXXON PLASTICS	-5229Z	MW13	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	28 --	4 PLASTIC	4 18-28	0386	D W
303310091105101	EXXON PLASTICS	-5230Z	MW14	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	29 --	4 PLASTIC	4 22-27	0386	D W
303312091105101	EXXON PLASTICS	-5231Z	MW15	S.E. LA. AQ. SYSTEM BURMAH	054	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303331091125601	PAXON POLYMER	-5243Z	MW-1	S.E. LA. AQ. SYSTEM GERAGHTY	058	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	32 PA	2		0485	
303331091125602	PAXON POLYMER	-5278Z	MW-1R	S.E. LA. AQ. SYSTEM SOILS	058	SURFICIAL 06S	CONFINING UNIT 01W	MONITOR	37 --	2 PLASTIC	2 32-37	0292	D W
303448091143402	NPC SERVICES	-5279Z	P930-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	PIEZOMETER	35 --	2 METAL	2 10-35	1191	D W
303448091143403	NPC SERVICES	-5280Z	1030-5	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	PIEZOMETER	85 --	2 METAL	2 45-85	1191	D W
303448091143404	NPC SERVICES	-5281Z	W511-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	RECOVERY	38 --	4 METAL	4 8-38	0392	D W
303448091143405	NPC SERVICES	-5282Z	W514-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	RECOVERY	58 --	4 METAL	4 8-58	0392	D W
303448091143406	NPC SERVICES	-5283Z	W516-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	RECOVERY	92 --	4 METAL	4 12-92	0392	D W
303448091143407	NPC SERVICES	-5284Z	W521-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	SURFICIAL 05S	CONFINING UNIT 01W	RECOVERY	58 --	4 METAL	4 13-58	0292	D W

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
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IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303448091143408	NPC SERVICES	-5285Z	W610-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	78 --	4 METAL	4 13-78	0392	D W
303448091143409	NPC SERVICES	-5286Z	W626-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	68 --	4 METAL	4 13-68	1291	D W
303448091143410	NPC SERVICES	-5287Z	W821-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	63 --	4 METAL	4 18-63	0292	D W
303452091143302	NPC SERVICES	-5288Z	W825-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	68 --	4 METAL	4 13-68	1091	D W
303452091143303	NPC SERVICES	-5289Z	W825-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	68 --	4 METAL	4 13-68	1091	D W
303448091143411	NPC SERVICES	-5290Z	1024-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	76 --	4 METAL	4 16-76	0292	D W
303448091143412	NPC SERVICES	-5291Z	1119-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	73 --	4 METAL	4 18-73	0292	D W
303448091143413	NPC SERVICES	-5292Z	1121-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	55 --	4 METAL	4 15-55	0292	D W
303448091143414	NPC SERVICES	-5293Z	1124-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	78 --	4 METAL	4 13-78	0292	D W
303452091143304	NPC SERVICES	-5294Z	1126-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	58 --	4 METAL	4 38-58	1091	D W
303448091143415	NPC SERVICES	-5295Z	WT-08	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	44 --	4 METAL	4 14-44	1291	D W
303422091130802	ROLLINS ENV SER	-5296Z	P-48A	S.E. LA. AQ. SYSTEM ENCOR	033	05S	01W	SURFICIAL CONFINING UNIT PIEZOMETER	12 --	2 PLASTIC	2 7-12	0392	D W
303422091131702	ROLLINS ENV SER	-5297Z	P-49A	S.E. LA. AQ. SYSTEM ENCOR	033	05S	01W	SURFICIAL CONFINING UNIT PIEZOMETER	12 --	2 PLASTIC	2 7-12	0392	D W
303448091143105	NPC SERVICES	-5298Z	1030-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	044	05S	01W	SURFICIAL CONFINING UNIT PIEZOMETER	85 --	2 METAL	2 45-85	0991	D W
303306091105201	EXXON PLASTICS	-5302Z	MW16	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303307091104901	EXXON PLASTICS	-5303Z	MW17	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	32 --	4 PLASTIC	4 22-32	0386	D W
303308091104801	EXXON PLASTICS	-5304Z	MW18	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	28 --	4 PLASTIC	4 18-28	0386	D W

WELLR001 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
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IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303309091104501	EXXON PLASTICS	-5305Z	MW19	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 PA	4 PLASTIC	4 5-10	0386	D W
303309091104401	EXXON PLASTICS	-5306Z	MW20	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	30 PA	4 PLASTIC	4 20-30	0386	D W
303309091103302	EXXON PLASTICS	-5307Z	MW21	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303316091104301	EXXON PLASTICS	-5308Z	MW22	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 PA	4 PLASTIC	4 5-10	0386	D W
303314091104001	EXXON PLASTICS	-5309Z	MW23	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303317091103701	EXXON PLASTICS	-5310Z	MW24	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303319091104101	EXXON PLASTICS	-5311Z	MW25	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	10 --	4 PLASTIC	4 5-10	0386	D W
303317091103702	EXXON PLASTICS	-5312Z	MW32	S.E. LA. AQ. SYSTEM BURMAH	054	06S	01W	SURFICIAL CONFINING UNIT MONITOR	30 --	4 PLASTIC	4 20-30	0386	D W
303448091143001	NPC SERVICES	-5365Z	BRW4	S.E. LA. AQ. SYSTEM WARE LIND	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	30 PA	4 STEEL	4 10-30	0386	D W
303449091143001	NPC SERVICES	-5366Z	BRW5	S.E. LA. AQ. SYSTEM WARE LIND	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	40 PA	4 STEEL	4 20-40	0386	D W
303447091142901	NPC SERVICES	-5367Z	BRW6	S.E. LA. AQ. SYSTEM WARE LIND	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	15 PA			0386	D W
303448091143101	NPC SERVICES	-5368Z	BRW7	SHALLOW SANDS OF BATON ROUGE AREA WARE LIND	044	05S	01W	RECOVERY	47 PA	4 STEEL	4 27-47	0386	D W
303448091143102	NPC SERVICES	-5369Z	BRW8	SHALLOW SANDS OF BATON ROUGE AREA WARE LIND	044	05S	01W	RECOVERY	40 PA	4 STEEL	4 25-40	0386	D W
303448091143201	NPC SERVICES	-5370Z	BRW9	SHALLOW SANDS OF BATON ROUGE AREA WARE LIND	044	05S	01W	RECOVERY	63 PA	4 STEEL	4 15-60	0386	D W
303448091142802	NPC SERVICES	-5371Z	RW10	S.E. LA. AQ. SYSTEM WARE LIND	044	05S	01W	SURFICIAL CONFINING UNIT RECOVERY	25 PA	4 STEEL	4 20-25	0386	D W
303235091123401	USX REALTY	-5399Z	DG-1	S.E. LA. AQ. SYSTEM WARE LIND	057	06S	12E	SURFICIAL CONFINING UNIT MONITOR	40 --	2 PLASTIC	2 30-40	0886	D
303234091123501	USX REALTY	-5400Z	DG-2	S.E. LA. AQ. SYSTEM WARE LIND	057	06S	12E	SURFICIAL CONFINING UNIT MONITOR	40 --	2 PLASTIC	2 30-40	0886	D

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
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IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO	
303234091123101	USX REALTY	-5401Z	DG-3	S.E. LA. AQ. SYSTEM WARE LIND	SURFICIAL 057	06S	12E	CONFINING UNIT MONITOR	31 --	2 PLASTIC	2 21-31	0886	D	
303235091123101	USX REALTY	-5402Z	UG-1	S.E. LA. AQ. SYSTEM WARE LIND	SURFICIAL 057	06S	12E	CONFINING UNIT MONITOR	31 --	2 PLASTIC	2 21-31	0886	D	
303439091142201	NPC SERVICES	-5420Z	BB1120	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	27 --	2 METAL	2 7-27	1291	D	W
303439091142202	NPC SERVICES	-5421Z	BB1130	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	27 --	2 METAL	2 7-27	1291	D	W
303439091142203	NPC SERVICES	-5422Z	BB1140	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	27 --	2 METAL	2 7-27	1291	D	W
303445091142901	NPC SERVICES	-5423Z	BB21-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	42 --	4 METAL	4 12-42	1191	D	W
303444091142801	NPC SERVICES	-5424Z	BB2110	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	37 --	2 METAL	2 7-37	1191	D	W
303444091142802	NPC SERVICES	-5425Z	B21120	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	37 --	2 METAL	2 7-37	1191	D	W
303453091143101	NPC SERVICES	-5426Z	P626-1	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	75 --	2 METAL	2 55-75	1291	D	W
303453091143102	NPC SERVICES	-5427Z	P626-2	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	61 --	2 METAL	2 41-61	1291	D	W
303453091143103	NPC SERVICES	-5428Z	P626-3	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	70 --	2 METAL	2 50-70	1291	D	W
303453091143104	NPC SERVICES	-5429Z	P626-4	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	45 --	2 METAL	2 25-45	1291	D	W
303453091143105	NPC SERVICES	-5430Z	P626-5	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	68 --	2 METAL	2 48-68	0192	D	W
303453091143106	NPC SERVICES	-5431Z	P626-6	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	42 --	2 METAL	2 22-42	0192	D	W
303453091143201	NPC SERVICES	-5432Z	P626-7	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	65 --	2 METAL	2 45-65	0192	D	W
303453091143202	NPC SERVICES	-5433Z	P626-8	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	40 --	2 METAL	2 20-40	1291	D	W
303448091143002	NPC SERVICES	-5434Z	P930-2	S.E. LA. AQ. SYSTEM LAYNE (ENV)	SURFICIAL 044	05S	01W	CONFINING UNIT PIEZOMETER	70 --	2 METAL	2 40-70	1191	D	W

WELLR001 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303600 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	TOWN SECT	SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO
303448091143003	NPC SERVICES	-5435Z	P930-3	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT PIEZOMETER	40 --	2 METAL	2 10-40	1191	D W
303448091143004	NPC SERVICES	-5436Z	1030-1	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT PIEZOMETER	85 --	2 METAL	2 45-85	1191	D W
303448091143104	NPC SERVICES	-5437Z	1030-2	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT PIEZOMETER	85 --	2 METAL	2 45-85	1191	D W
303448091143005	NPC SERVICES	-5438Z	1030-3	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT PIEZOMETER	40 --	2 METAL	2 10-40	1191	D W
303448091143006	NPC SERVICES	-5439Z	1030-4	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT PIEZOMETER	40 --	2 METAL	2 10-40	1191	D W
303452091143101	NPC SERVICES	-5440Z	W626-1	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT RECOVERY	68 --	4 METAL	4 13-68	1291	D W
303451091143501	NPC SERVICES	-5441Z	W924-1	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT RECOVERY	86 --	4 METAL	4	0192	D W
303450091143501	NPC SERVICES	-5442Z	1025-1	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT RECOVERY	83 --	4 METAL	4 53-83	1191	D W
303448091143301	NPC SERVICES	-5443Z	1127-1	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT RECOVERY	75 --	4 METAL	4 45-75	1291	D W
303447091143401	NPC SERVICES	-5444Z	1127-2	S.E. LA. AQ. SYSTEM SURFICIAL LAYNE (ENV)	044	05S	01W	CONFINING UNIT RECOVERY	73 --	4 METAL	4 18-73	1091	D W
303350091125101	ROLLINS ENV SER	-5449Z	4CL	SHALLOW SANDS OF BATON ROUGE AREA ENCOR	048	05S	01W	MONITOR	126 --	2 STEEL	2 116-126	1092	D W
303509091143601	REYNOLDS METALS	-5453Z	MW-1	S.E. LA. AQ. SYSTEM SURFICIAL ENVIROCORP	044	05S	01W	CONFINING UNIT MONITOR	34 --	4 PLASTIC	4 24-34	0986	D W
303510091143701	REYNOLDS METALS	-5454Z	MW-2	S.E. LA. AQ. SYSTEM SURFICIAL ENVIROCORP	044	05S	01W	CONFINING UNIT MONITOR	34 --	4 PLASTIC	4 31-34	0986	D W
303508091143701	REYNOLDS METALS	-5455Z	MW-3	S.E. LA. AQ. SYSTEM SURFICIAL ENVIROCORP	044	05S	01W	CONFINING UNIT MONITOR	36 --	4 PLASTIC	4 25-35	0986	D W
303507091143601	REYNOLDS METALS	-5456Z	MW-4	S.E. LA. AQ. SYSTEM SURFICIAL ENVIROCORP	044	05S	01W	CONFINING UNIT MONITOR	33 --	4 PLASTIC	4 28-33	0986	D W
303505091092901	DUPUY, RANDY	-5465Z		NO WELL MADE, LOG DEPTH SHOWN ROBIN'S	048	05S	01E	HEAT PUMP	150 HH			0187	D
303512091144301	SCHUYLKILL META	-5470Z	W-4	S.E. LA. AQ. SYSTEM SURFICIAL UNKNOWN	044	05S	01W	CONFINING UNIT MONITOR	30 PA				

WELLRQ01 - REGISTERED WATER WELLS IN E. BATON ROUGE -- SORTED BY WELL NUMBER
REQUESTED BY:PRC ENVIRONMENTAL MANAGEMENT, INC. SITE I
WITHIN A 4.0000 MILE RADIUS OF LATITUDE 303500 LONGITUDE 911315

IDENTIFICATION NUMBER	OWNER'S NAME	WELL NUMBER	OWNR NO.	GEOLOGIC UNIT / DRILLER	SECT	TOWN SHIP	RANGE	WELL USE	DEPTH SUB USE	CASING DIAMETER MATERIAL	SCREEN DIAMETER INTERVAL	DATE COMPL	AVAIL INFO	
303512091144302	SCHUYLKILL META	-5471Z	MW-4A	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT GDC	044	05S	01W	MONITOR	30 PA	2 PLASTIC	2 20-30	0187	D	
303513091143600	SCHUYLKILL META	-5472Z	W10A	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	50 PA					
303515091143701	SCHUYLKILL META	-5473Z	MW14	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT GULF DRILLING	044	05S	01W	MONITOR	60 --	2 PLASTIC	2 50-60	0187	D	
303514091143801	SCHUYLKILL META	-5474Z	MW15	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT GULF DRILLING	044	05S	01W	MONITOR	46 --	2 PLASTIC	2 36-46	0187	D	
303521091125901	MACDAVIS, GEO	-5480Z		"400-FOOT" SAND OF BATON ROUGE AREA ECONOMY	044	05S	12E	DOMESTIC	250 --	2 PLASTIC	2 240-250	0986	D	W
303551091132301	DAVIS, DUMAS	-5487Z		"400-FOOT" SAND OF BATON ROUGE AREA ECONOMY	084	05S	12E	DOMESTIC	230 --	2 PLASTIC	2 220-230	0986	D	W
303550091124301	CELERON OIL-GAS	-5498Z	CRU2	"400-FOOT" SAND OF BATON ROUGE AREA GUICHARD	084	05S	01W	RIG SUPPLY	241 --	4 PLASTIC	4 221-241	0387	D	W
303458091143502	NPC SERVICES	-5511Z	BL1B	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	56 PA					
303452091144001	NPC SERVICES	-5512Z	BM1D	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	44 PA					
303452091144002	NPC SERVICES	-5513Z	BM1S	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	21 PA					
303455091144601	NPC SERVICES	-5514Z	BM2D	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	55 PA					
303455091144602	NPC SERVICES	-5515Z	BM2S	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	21 PA					
303443091142601	NPC SERVICES	-5516Z	BM3S	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	30 PA					
303444091142701	NPC SERVICES	-5517Z	TW1A	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	37 PA					
303452091143801	NPC SERVICES	-5518Z	BTW2	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	88 PA					
303503091144101	NPC SERVICES	-5519Z	GM1D	SHALLOW SANDS OF BATON ROUGE AREA UNKNOWN	044	05S	01W	MONITOR	109 PA					
303503091144102	NPC SERVICES	-5520Z	GM1S	S.E. LA. AQ. SYSTEM SURFICIAL CONFINING UNIT UNKNOWN	044	05S	01W	MONITOR	72 PA					

DOTD'S USE AND SUB-USE COMPUTER CODES FOR WATER WELLS AND HOLES

	WELL USE	SUB-USE	
A	Abandoned	- -	
		- D	Destroyed
B	Plugged	E X	Excavated Out
		P A	Plugged
C	Cathodic	- -	
D	Dewatering	- -	
E	Power Generation	- -	
H	Domestic	- -	
I	Irrigation	- -	
		- A	Aquaculture
L	Heat Pump	H H	Hole
		H S	Supply Well
M	Monitor	- -	
N	Industrial	2 0	Food and kindred products
		2 2	Textile mill products
		2 4	Lumber & wood products
		2 6	Paper & allied products
		2 8	Chemicals & allied products
		2 9	Petroleum refining and related industries
		3 3	Primary metal industries
		9 9	Other
O	Observation	- O	Multiple Purpose
		- Q	Water Quality
		- W	Water Level
P	Public Supply	- C	Commercial
		- M	Therapeutic
		- P	Municipal
		- R	Rural
		- T	Institution/Government
		- Z	Other
R	Recovery	- -	
S	Rig Supply	- -	
T	Test Hole	- -	
W	Piezometer	- -	
Z	Other	- F	Fire Protection
		- I	Inactive
		- R	Reworked
		- S	Standby
		- U	Unknown
		- Z	Other

NOTE: **For all uses, "PA" under sub-use indicates that the well has been reported as plugged.**

ZB:DL:mql
10/28/91
1.013

EXPLANATION OF TERMS FOR THE LOUISIANA DEPT. OF TRANSPORTATION AND DEVELOPMENT'S COMPUTERIZED LISTING OF REGISTERED WATER WELLS AND HOLES

IDENTIFICATION NUMBER - This is a unique I.D. number that includes the latitude (first six numbers), longitude (second six numbers), and a sequential number (last two digits). The sequential number identifies a specific well when other nearby wells have the same latitude and longitude.

REVISED COORDINATES - Latitude and Longitude of a well (shown only if different than the I.D. number).

OWNER'S NAME - Name of an individual, company or agency who was or is either the legal owner of the property or the lessee at the time the well was inventoried or registered.

WELL NUMBER - Well number, by parish, assigned either by the U.S. Geological Survey or LA. DOTD.

OWNER'S NUMBER - Well name or number assigned by the owner to identify each well on his/her property.

GEOLOGIC UNIT - Aquifer in which the well is screened.

WELL DEPTH - Depth of the well, in feet, measured from bottom of the screen (or bottom of the tail pipe, back pressure valve, etc.) to the ground surface.

WELL USE/SUBUSE - Main use of the well (see attached sheet). The use of the well is subject to change and may not be up-to-date, especially for older wells.

CASING/SCREEN DIAMETER - Nominal diameter of casing/screen, in inches.

SCREEN INTERVAL - Depth, in feet, measured from ground surface to the top and bottom of the screen.

DATE COMPLETED - The month and year the well was completed.

AVAILABLE INFORMATION - Indicates available information as follows:

- E - Geophysical Log
- D - Drillers Log
- M - Mechanical Analysis
- Q - Quality of Water
- B - Bacteriological Analysis
- P - Pumping Test
- W - Water Level

Available information may be obtained from DOTD, USGS, driller, engineer, and/or other sources.

ZB:DL:mql
1/19/93
1.014

REFERENCE 17

code of federal regulations

Protection of Environment

40

PARTS 300 TO 399

Revised as of July 1, 1992

-All gaseous hazardous substances associated with a source with a gas containment factor value greater than 0 (see section 6.1.2.1.1).

-All particulate hazardous substances associated with a source with a particulate containment factor value greater than 0 (see section 6.1.2.2.1).

• For each migration pathway, in those instances when the specific source(s) containing the hazardous substance cannot be documented, consider that hazardous substance to be available to migrate to the pathway when it can be associated (see section 2.2.2) with at least one source having a containment factor value greater than 0 for that pathway.

In evaluating the soil exposure pathway, consider the following hazardous substances available to the pathway:

• Soil exposure—resident population threat.

-All hazardous substances that meet the criteria for observed contamination at the site (see section 5.0.1).

• Soil exposure—nearby population threat.

-All hazardous substances that meet the criteria for observed contamination at areas with an attractiveness/accessibility factor value greater than 0 (see section 5.2.1.1).

2.3 *Likelihood of release.* Likelihood of release is a measure of the likelihood that a waste has been or will be released to the environment. The likelihood of release factor category is assigned the maximum value of 550 for a migration pathway whenever the criteria for an observed release are met for that pathway. If the criteria for an observed release are met, do not evaluate potential to release for that pathway. When the criteria for an observed release are not met, evaluate potential to release for that pathway, with a maximum value of 500. The evaluation of potential to release varies by migration pathway (see sections 3, 4 and 6).

Establish an observed release either by direct observation of the release of a hazardous substance into the media being evaluated (for example, surface water) or by chemical analysis of samples appropriate to the pathway being evaluated (see sections 3, 4, and 6). The minimum standard to establish an observed release by chemical analysis is analytical evidence of a hazardous substance in the media significantly above the background level. Further, some portion of the release must be attributable to the site. Use the criteria in Table 2-3 as the standard for determining analytical significance. (The criteria in Table 2-3 are also used in establishing observed contamination for the soil exposure pathway, see section 5.0.1.)

Separate criteria apply to radionuclides (see section 7.1.1).

TABLE 2-3—OBSERVED RELEASE CRITERIA FOR CHEMICAL ANALYSIS

Sample Measurement < Sample Quantitation Limit [a] No observed release is established.
Sample Measurement ≥ **Sample Quantitation Limit** [a] An observed release is established as follows: • If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds the sample quantitation limit.[a] • If the background concentration equals or exceeds the detection limit, an observed release is established when the sample measurement is 3 times or more above the background concentration.

[a] If the sample quantitation limit (SQL) cannot be established, determine if there is an observed release as follows:
—If the sample analysis was performed under the EPA Contract Laboratory Program, use the EPA contract-required quantitation limit (CRQL) in place of the SQL.
—If the sample analysis is not performed under the EPA Contract Laboratory Program, use the detection limit (DL) in place of the SQL.

2.4 *Waste characteristics.* The waste characteristics factor category includes the following factors: hazardous waste quantity, toxicity, and as appropriate to the pathway or threat being evaluated, mobility, persistence, and/or bioaccumulation (or ecosystem bioaccumulation) potential.

2.4.1 *Selection of substance potentially posing greatest hazard.* For all pathways (and threats), select the hazardous substance potentially posing the greatest hazard for the pathway (or threat) and use that substance in evaluating the waste characteristics category of the pathway (or threat). For the three migration pathways (and threats), base the selection of this hazardous substance on the toxicity factor value for the substance, combined with its mobility, persistence, and/or bioaccumulation (or ecosystem bioaccumulation) potential factor values, as applicable to the migration pathway (or threat). For the soil exposure pathway, base the selection on the toxicity factor alone.

Evaluation of the toxicity factor is specified in section 2.4.1.1. Use and evaluation of the mobility, persistence, and/or bioaccumulation (or ecosystem bioaccumulation) potential factors vary by pathway (or threat) and are specified under the appropriate pathway (or threat) section. Section 2.4.1.2 identifies the specific factors that are combined with toxicity in evaluating each pathway (or threat).

2.4.1.1 *Toxicity factor.* Evaluate toxicity for those hazardous substances at the site that are available to the pathway being scored. For all pathways and threats, except the surface water environmental threat, evaluate human toxicity as specified below.

REFERENCE 18

WORK PLAN
FOR A
SUPPLEMENTAL WASTE INVESTIGATION
BATON ROUGE BAYOU
AT THE
BROOKLAWN SITE
PETRO-PROCESSORS, INC.

NPC SERVICES, INC.

November 12, 1990

WORK PLAN
FOR A
SUPPLEMENTAL WASTE INVESTIGATION
BATON ROUGE BAYOU
AT THE
BROOKLAWN SITE
PETRO-PROCESSORS, INC.

NPC SERVICES, INC.

1.0 INTRODUCTION

This Work Plan addresses a proposed supplemental waste investigation to define an area of contamination recently discovered during the remediation of Baton Rouge Bayou, downstream of the Petro-Processors' Brooklawn site. The investigation covered by this Work Plan is intended to supplement the work outlined in the 1985 Remedial Planning Activities (1985 RPA) Report. Visible contamination was discovered at greater depths than previously anticipated during recent remediation efforts, and the potential lateral and vertical limits of the contamination have become an item of concern.

The approved work plan for the remediation of Baton Rouge Bayou involved the excavation of all visibly contaminated soils and sediments plus one foot of clean material from approximately 2500 feet of the bayou and the disposal of these soils within the backfill of the Brooklawn site. A 700 foot section of Baton Rouge Bayou has been excavated and accepted by the U.S. EPA as being remediated. The upper portion of an additional 500 feet of the bayou has also been excavated. This work consisted of removing the upper 8 to 10 feet of soils and sediments from within the bayou, after stabilization with lime kiln dust, followed by consolidation of these materials on the Brooklawn sites. Soil samples were also collected for visual observation of contamination. The soil samples were visibly contaminated. During the process of removing the contaminated soil from the bayou, several test pits were excavated along its centerline in order to visually observe the deeper soils and sediments for the presence of waste. Visibly

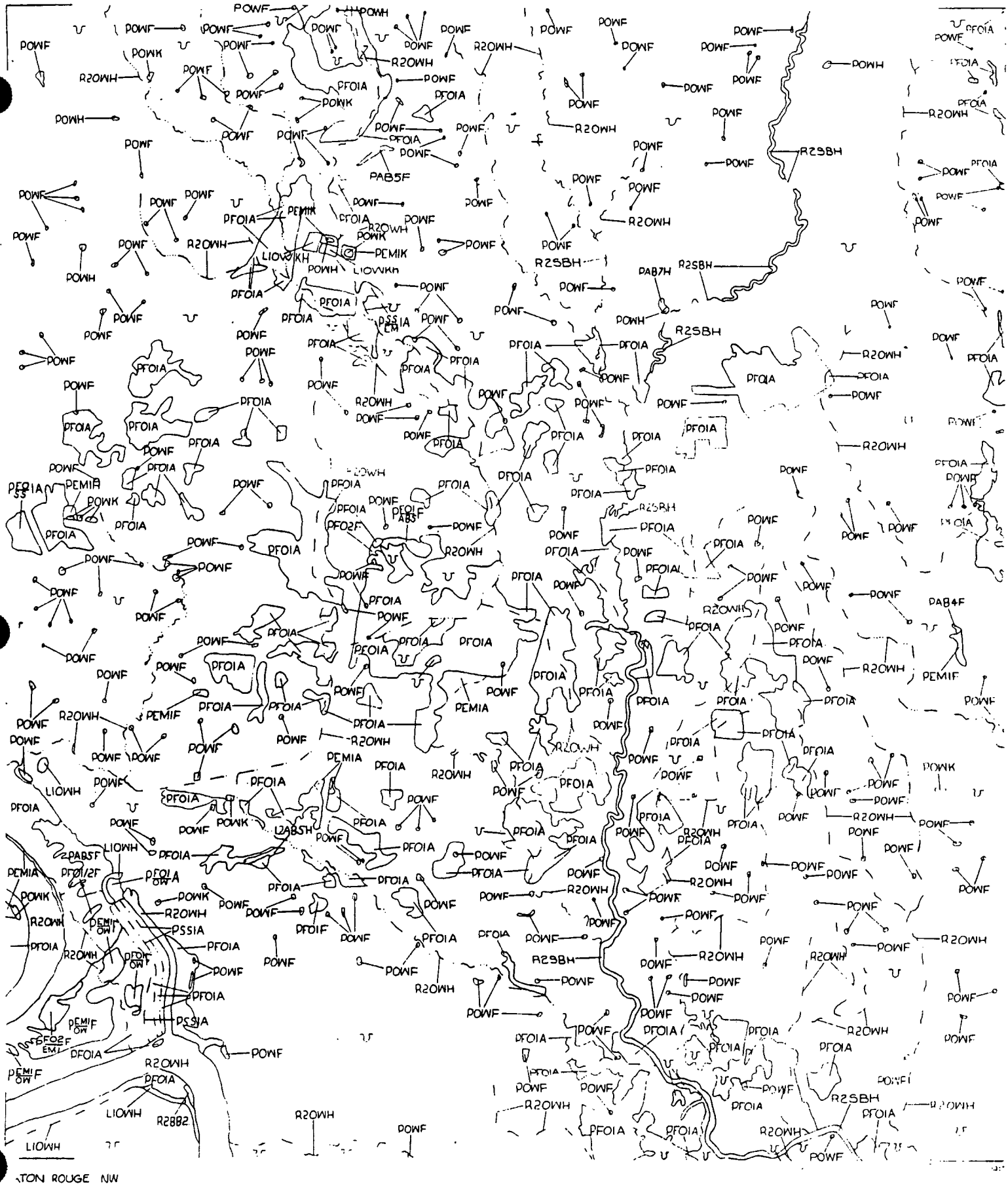
contaminated soils were encountered at the maximum depth of several test pits, which was 23 to 25 feet below the surface of the haul road. As documented in Dames & Moore's report dated October 29, 1990, entitled "Bottom Failure/Slope Stability Analyses of Baton Rouge Bayou Excavation" (copy attached), analyses indicate that excavations in this area below 23 feet MSL should be avoided due to a significant risk for a bottom "blow-in" failure which would likely result in a failure of the excavation sideslope. A feasibility analysis for excavating below the water table in alluvial soils was performed as a part of the Remedial Planning Activities Report dated 1985. The result of the analysis indentified the following additional problem areas that would likely be expected if deep excavations were attempted in the alluvial soils at the Brooklawn site.

- Groundwater control including the need to dewater the excavation using peripheral well points.
- Potential for contaminant migration both due to the above dewatering as well as bottom failure which could allow downward movement of contaminants into deeper water bearing strata.
- Increased work hazards due to all of the above problems.

Consistent with the conclusions reached in the 1985 Remedial Planning Activities Report, NPC intends to evaluate an extension of the Brooklawn hydraulic containment and recovery system to remediate these deeper contaminated zones.

As shown on Figure 1, NPC plans on investigating the presence of subsurface contamination within Baton Rouge Bayou, including the northern portion of one distributary to the west and the downgradient area located to the west of the contaminated portion of the bayou. The purpose of this Work Plan is to provide a written guidance document for conducting this subsequent investigation. In addition to evaluating the extent of

REFERENCE 19



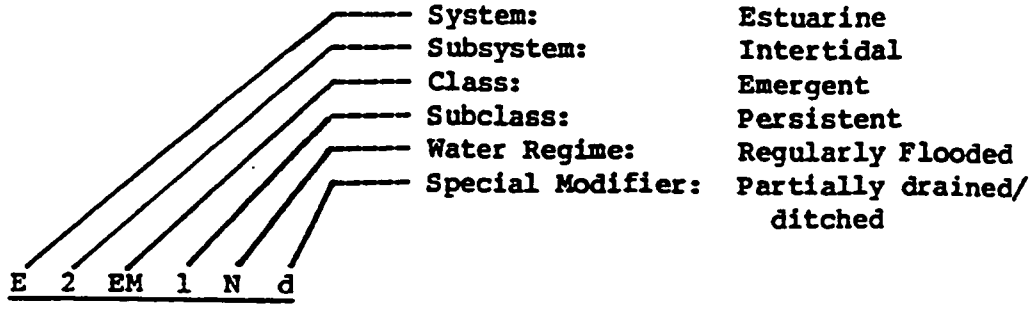
ATON ROUGE NW
NEW ROADS

ZACHARY, LA

Use of Wetland Legend: Wetland data is displayed on the overlays by a series of letters and numbers (alpha numerics) with the first letter representing the system and subsequent alpha numerics representing, in a sequential manner, the subordinate levels of detail down to the modifiers. Where classes and subclasses have been mixed, they are separated by a diagnonal line.

Examples

a. Classification of wetlands to water regime and special modifier:



b. Mixing of wetland classes and subclasses:

PFO/EM1A = Palustrine, Forested, (PFO) mixed with Palustrine, Emergent, persistent (PEM1) with a temporary water regime (A).

WETLAND LEGEND*

- System
- Subsystem

- M Marine
  - 1 Subtidal
  - 2 Intertidal
- E Estuarine
  - 1 Subtidal
  - 2 Intertidal
- P Palustrine
  - No Subsystem
- R Riverine
  - 1 Tidal
  - 2 Lower Perennial
  - 3 Upper Perennial
  - 4 Intermittent
  - 5 Unknown Perennial
- L Lacustrine
  - 1 Limnetic
  - 2 Littoral
- U Upland**

*Should be used in conjunction with "Classification of Wetlands and Deep-water Habitats of the United States," (1979), Cowardin et al.
**May include wetlands that could not be inventoried because of procedure used or due to mapping conventions.

☐ Class

☐ Subclass

AB Aquatic Bed

1 Algal
2 Aquatic Moss
3 Rooted Vascular
4 Floating Vascular
5 Unknown Submergent
6 Unknown Surface

EM Emergent

1 Persistent
2 Nonpersistent

FO Forested

1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 Deciduous
7 Evergreen

ML Moss/Lichen

1 Moss
2 Lichen

OW Open Water/ Unknown Bottom

RB Rock Bottom

1 Bedrock
2 Rubble

RF Reef

1 Coral
2 Mollusc
3 Worm

RS Rocky Shore.

1 Bedrock
2 Rubble

SB Streambed

1 Bedrock
2 Rubble
3 Cobble/Gravel
4 Sand
5 Mud
6 Organic
7 Vegetated

SS Scrub/Schrub

1 Broad-Leaved Deciduous
2 Needle-Leaved Deciduous
3 Broad-Leaved Evergreen
4 Needle-Leaved Evergreen
5 Dead
6 Deciduous
7 Evergreen

UB Unconsolidated Bottom

1 Cobble/Gravel
2 Sand
3 Mud
4 Organic

US Unconsolidated Shore

1 Cobble/Gravel
2 Sand
3 Mud
4 Organic
5 Vegetated

MODIFIERS TO WETLAND CLASSIFICATION

WATER REGIME MODIFIERS

Nontidal

A	Temporarily Flooded
B	Saturated
C	Seasonally Flooded
F	Semipermanently Flooded
G	Intermittently Exposed
H	Permanently Flooded
J	Intermittently Flooded

Tidal

L	Subtidal
M	Irregularly Exposed
N	Regularly Flooded
P	Irregularly Flooded
R	Seasonally Flooded
S	Temporarily Flooded
T	Semipermanently Flooded
V	Permanently Flooded

Nontidal and Tidal

U	Unknown
K	Artificially Flooded

WATER CHEMISTRY MODIFIERS

Coastal Halinity

1	Hyperhaline
2	Euhaline
3	Mixohaline (Brackish)
4	Polyhaline
5	Mesohaline
6	Oligohaline
0	Fresh

Inland Salinity

7	Hypersaline
8	Eusaline
9	Mixosaline
0	Fresh

pH Freshwater

a	Acid
t	Circumneutral
l	Alkaline

OTHER MODIFIERS

Special

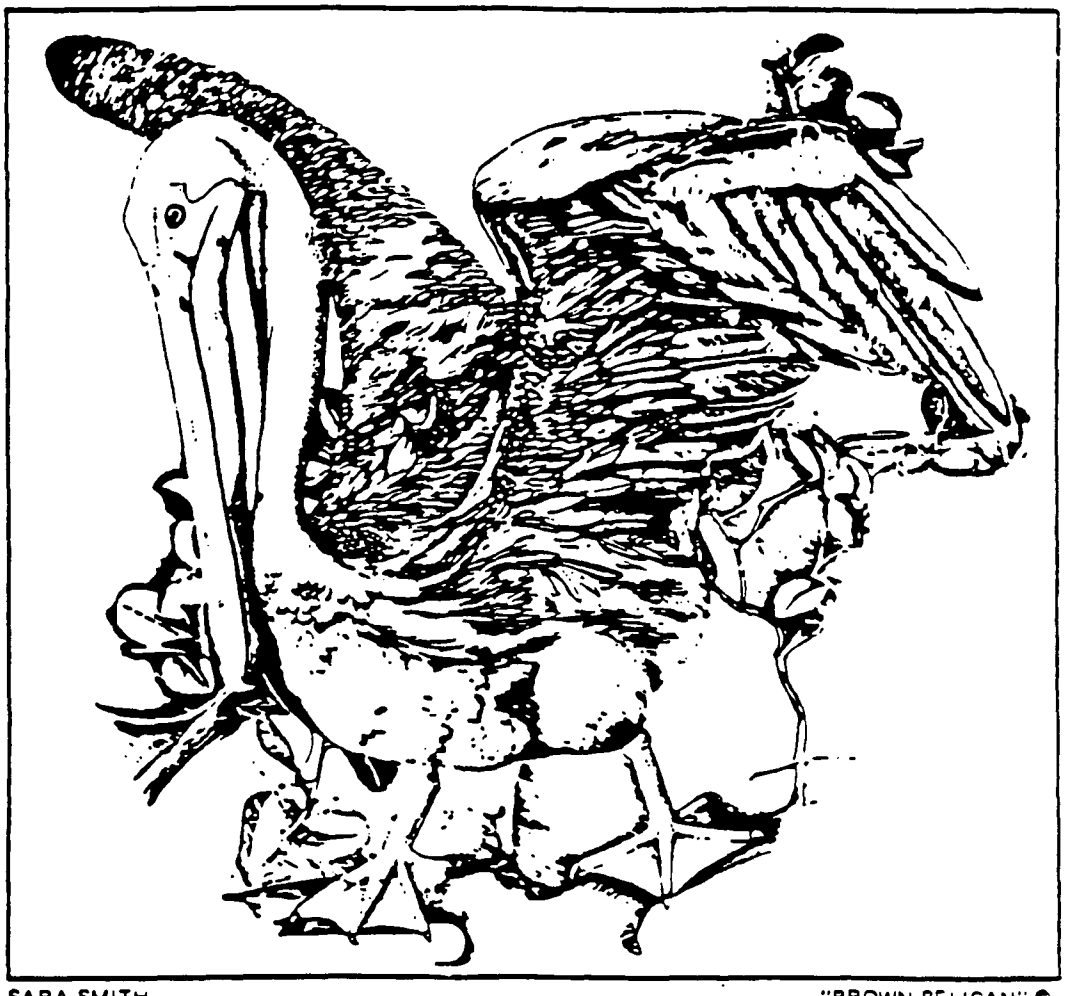
b	Beaver
d	Partially Drained
f	Farmed
h	Diked/Impounded
r	Artificial
s	Spoil
x	Excavated

Soils

q	Organic
n	Mineral

REFERENCE 20

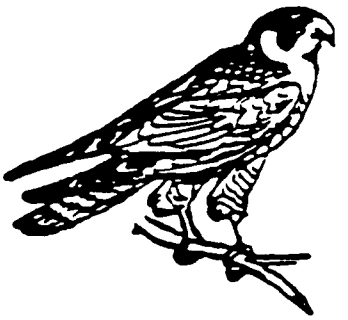
THREATENED AND ENDANGERED ANIMALS OF LOUISIANA



SARA SMITH "BROWN PELICAN" ©

Compiled by M.B. Watson

Louisiana Department of Wildlife and Fisheries



PEREGRINE FALCON
Falco peregrinus anatum
F. p. tundrius

The peregrine falcon is the famous "duck hawk" and has become rare in the U.S. dur to chlorinated hydrocarbon contamination in the aquatic environment.

DESCRIPTION: The head of the Peregrine Falcon is black with heavy moustach stripes. The upper body is slate-blue barred with dark brown. The primary feathers are dark brown, but the tail feathers are barred like the back tipped with light yellow-brown. The throat and belly are white to sienna-orange with narrow stripes on the chest and dark brown bars on the belly and flanks. The beak is slate-blue with a yellow cere, the eyes are dark brown and the feet and legs are yellow to greenish-yellow with black claws. The birds range in size from 13-19 inches. The females are much larger than the male.

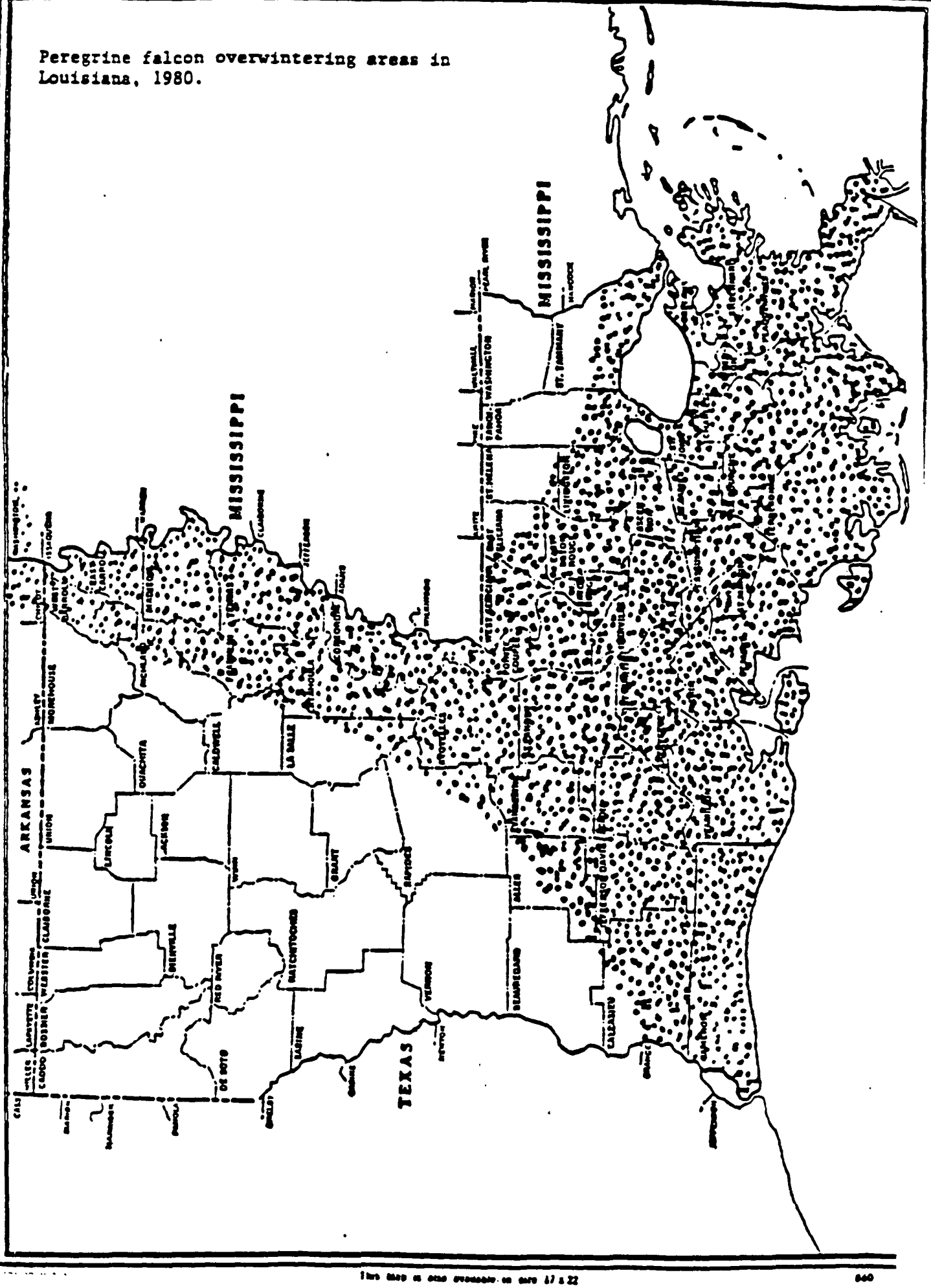
PREFERRED HABITAT: The species in Louisiana is likely to be found only near the Gulf. The preferred habitat of the Peregrine is rocky ledges, however they will nest in trees in flat terrain. There are no breeding Peregrines in Louisiana.

FOOD HABITS: The Peregrine falcon feeds primarily on other birds. They usually hunt their prey in the air and kill by diving on the flying bird striking it with their talons. They then catch the dead bird in air or follow it to the ground where they break the neck of its prey. Primary prey are bluejays, flickers, meadowlarks and pigeons. As indicated above, the falcon will also take ducks. The falcon's eyes are placed so it can see straight ahead, to the sic or below.

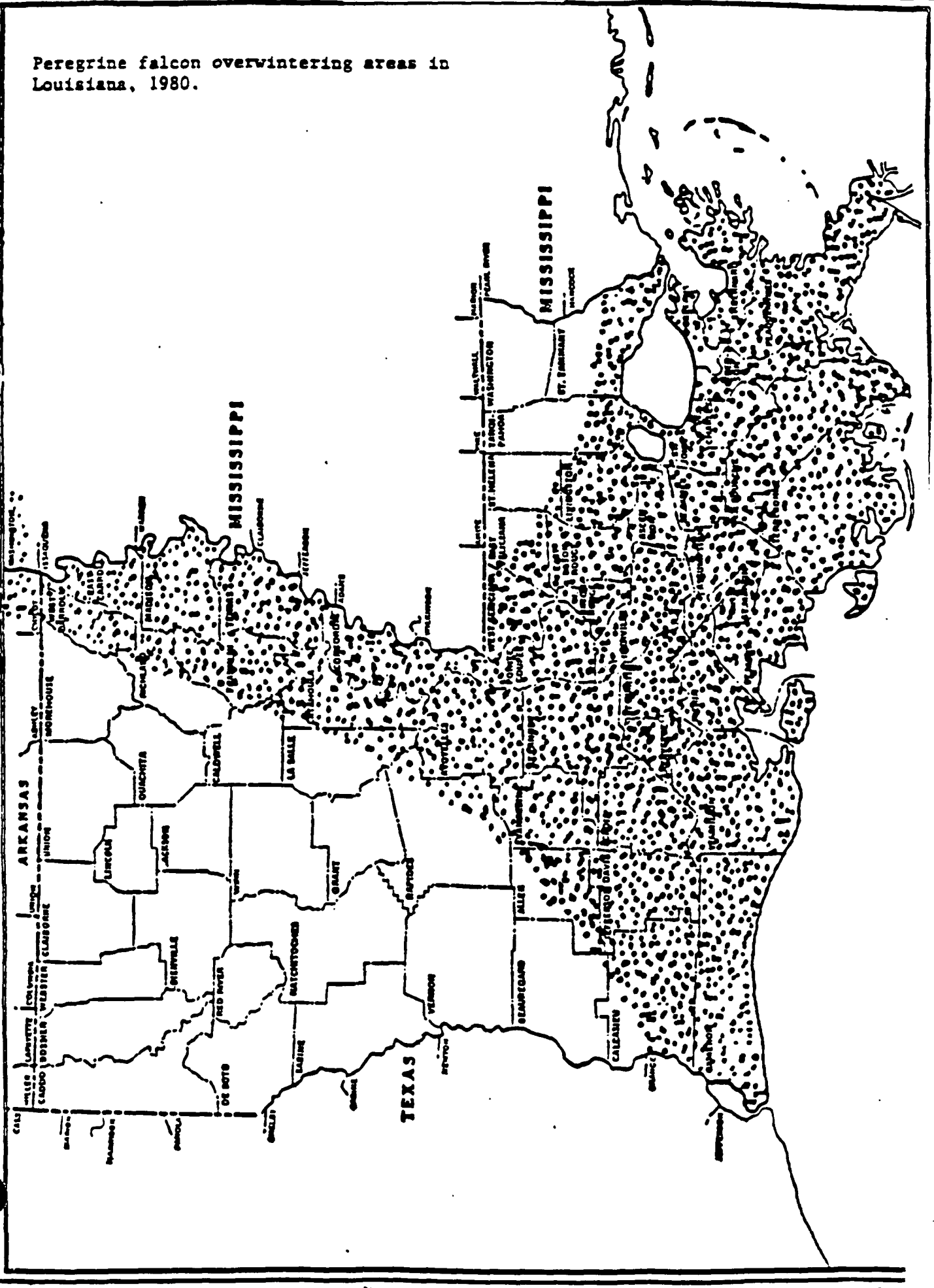
LIFE HISTORY: Falcons usually are sexually mature at three years. After mating, the eggs are laid in clutches of four usually in late March and April. Incubation last about 33 days. The female does most of the incubating while the male hunts.

The Falcons prefer high places such as cliffs to build their nests, but they will utilize buildings in areas where there are abundant pigeon population

Peregrine falcon overwintering areas in Louisiana, 1980.

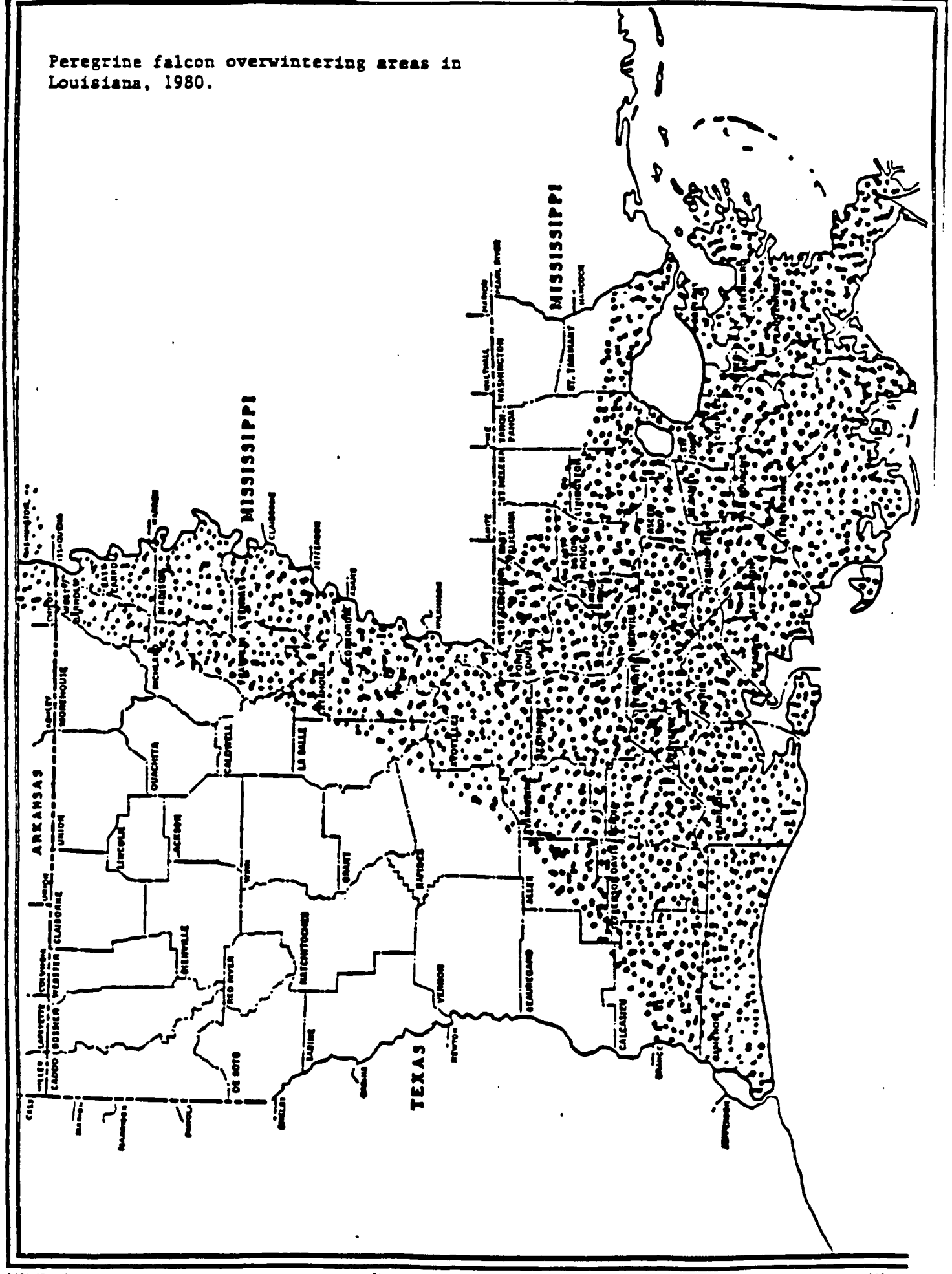


Peregrine falcon overwintering areas in Louisiana, 1980.



This map is also available in size 17 x 22

Peregrine falcon overwintering areas in Louisiana, 1980.



BALD EAGLE
Haliaeetus leucocephalus

The Bald Eagle is the national bird of the United States. It has become endangered because of habitat destruction and chloronated hydrocarbon contamination in its foodchain.

DESCRIPTION: The head, neck and tail of the adult are white while the remainder of the plumage is dark edged in pale olive-gray. The beak, cere, feet and skin around the eyes are dull yellow, the eyes are light yellow and the claws are black.

The eagle is a large bird ranging from 27-30 inches in length with a wing span to 7 feet.

PREFERRED HABITAT: Although the Bald Eagle is ubiquitous in North America it is seldom found far from a source of water as it is primarily a fish eater. Largest concentrations are in Alaska.

FOOD HABITS: As stated above the Bald Eagle is primarily a fish eater, but it will take carrion. The eagles fly above the water and capture their prey in their talons without diving into the water. They also rob ospreys of their catch.

LIFE HISTORY: The nesting pair breed in the most favorable season. In Louisiana mating occurs in late fall and the eggs are laid before Christmas. The young spend 3 mo ths in the nest. Eagles prefer high inaccessible places for their nest of sticks but remoteness is not essential. The nests are used for many years.

The nest is lined with soft material and the eggs are covered with it during the absence of the adults.

The clutch is generally composed of 2 white eggs, occasionally to rarely one, three or four.

During incubation both parents tend the eggs but the female is dominant in this activity. The male feeds the female during incubation, but both parents care for the young after hatching.

In nonbreeding seasons the eagles are resident within the range, but northern eagles may winter in the south along the coast and large rivers that are ice free, while southern eagles will fly north in summer.

Bald Eagle, Haliaeetus leucocephalus nesting and wintering sites in Louisiana, 1980

Wintering

Nesting

ARKANSAS

MISSISSIPPI

TEXAS

MISSISSIPPI

CADDO BOSSIER WEBSTER CLAIBORNE UNION MOREHOUSE WEST CARROLL EAST CARROLL

LINCOLN OUACHITA RICHLAND MADISON

JACKSON SIENVILLE

DE SOTO RED RIVER CALDWELL FRANKLIN TENSAS

NATCHITOCHES LA SALLE CATAHOULA CONCORDIA

GRANT RAPIDES AVOYELLES

EAST FELICIANA EAST PELICIANA ST. HELENA TANGIPAHOA WASHINGTON

POINTE COUPEE ST. LANDRY EVANGELINE ALLEN BEAUREGARD

EAST BATON ROUGE LIVINGSTON ST. TAMMANY

JEFFERSON DAVIS ACADIA ST. MARTIN IBERVILLE

LAFAYETTE IBERIA ASSUMPTION ST. JAMES ST. JOHN

CAMERON VERMILION ST. MARY LA FOURCHE TERREBONNE

JEFFERSON ST. BERNARD PLAQUEMINES

REFERENCE 21

State of Louisiana

RECEIVED
MAY 20 1993
PRC-BATON ROUGE

Joe L. Herring
Secretary

Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2800

17 May 1993

Edwin W. Edwards
Governor

Cedric J. Cascio
PRC Environmental Management, Inc.
9100 Bleubonnet Centre Boulevard
Suite 504
Baton Rouge, LA 70809

RE: Rare, threatened or endangered species and critical habitat assessment for EPA Superfund sites

Dear Mr. Cascio:

Personnel of the Natural Heritage Program have reviewed the captioned projects. In reviewing our data base, it was found that Scaphirhynchus albus, Pallid sturgeon, federally listed as endangered, occur within the Mississippi River with a specimen taken a few miles north of the mouth of Bayou Baton Rouge. It was also found that Mimulus ringens, square-stemmed monkey-flower (S2?, G5), is known to occur on the river side of the levee near Baton Rouge. No rare, threatened or endangered species were shown to occur within the given bounds of the other sites.

The Louisiana Natural Heritage Program has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. They should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

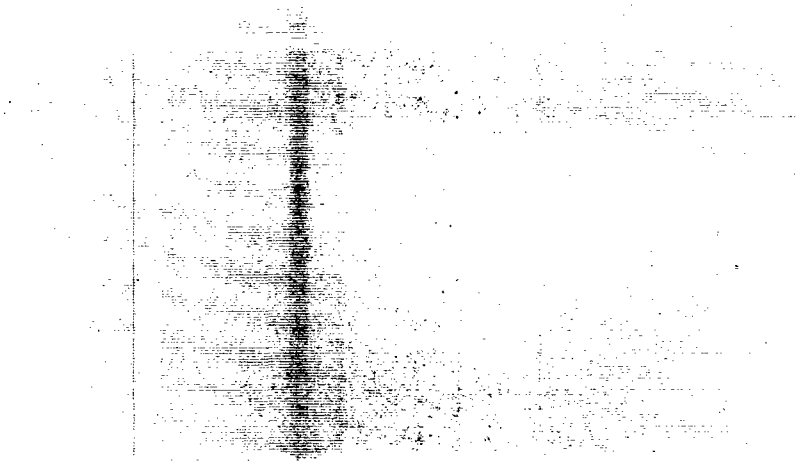
Sincerely,

Catherine Smith
for
Gary D. Lester, Coordinator
Louisiana Natural Heritage Program

GDL:bjk

cc: Ecological Studies, LDWF

REFERENCE 22



LOUISIANA NATURAL HERITAGE PROGRAM
Habitat Conservation Division
Department of Wildlife & Fisheries

1991-1992 budget: approx. $272,000 ($62,000 general funds, $113,000 self-generated, $163,000 conservation dollars)
Positions: Coordinator, Zoologist, Plant Ecologist, Botanist, Nongame Biologist, Data Manager

Eighty-seven percent of the 895 vertebrate species in Louisiana are nongame. That is, they are not hunted, fished, or trapped. The Louisiana Natural Heritage Program (LNHP) conducts ongoing research on these species, with specific emphasis on rare, threatened and endangered (R/T/E) plant and animal species, and significant natural areas. Data concerning the status and distribution of R/T/E species, and natural areas are maintained in computer and manual files, indexed by numerous fields, creating a flexible database system that can respond to a wide variety of user needs. The Natural Heritage Program provides information and management suggestions to public and private policy-makers, and is consulted prior to Department decisions on Coastal Management Division, Corps of Engineers, Department of Transportation and Development, etc. permits. The Natural Heritage Program works closely with the Louisiana Nature Conservancy to protect priority sites throughout Louisiana. The primary objectives of the LNHP are:

1) to gather information systematically and on a continuing basis on the occurrences of rare, threatened and endangered (r/t/e) species and significant ecological features of the state, including outstanding examples of native ecosystems, and critical areas benefitting the environment;
2) to assemble and store this information efficiently in our data management system;
3) to make data retrieval utilitarian and cost-effective so that the potential impact of various activities on identified lands can be evaluated; and
4) to set rational conservation plans to conserve the state's biological diversity.

The Natural Heritage Program began in 1984, is the only program in the state actively involved with conservation of nongame species. Currently, there are 50 heritage programs--one in every state.

Of the 3,983 computerized occurrence records of R/T/E species and significant natural areas, 1,369 are special animal occurrences, 1,683 are special plant occurrences, and 574 are outstanding locations of natural plant communities. Additionally, some 357 records are of waterbird nesting colonies and state and national champion trees.

Map files, manual files, and computer files keep information well-organized and easily accessible. Records are indexed by name, location, status, watershed, and land ownership, creating a flexible user-request system. The LNHP provides practical, up-to-date information to public and private policy makers. Applications of the database have been used in virtually every aspect of biological conservation.

The database also includes information on 251 managed areas within the state as well as over 2,500 source abstracts. In previous years the LNHP developed the first statewide natural community classification system with seven natural community systems containing 75 distinct communities. The LNHP has located high quality examples of more than 85 percent of the communities with a state rank of S1-S3 (endangered-rare). Over 1,800 sites statewide have been surveyed for r/t/e species and unique natural communities by the Heritage staff. These sites represent habitat for over 200 state-r/t/e species of plants and animals. Of the 3,983 computerized records in the database, 1,369 represent occurrences of r/t/e animal species, 1,683 records are r/t/e plant species occurrences, and 574 represent occurrences of unique natural communities. Additionally, the location of more than 300 wading and seabird colonies are mapped in the database.

Besides nongame inventory work and research, the LNHP staff has reviewed for their effects on nongame wildlife thousands of proposed federal, state, parish, municipal, and privately funded projects. In doing so, they have protected numerous sites housing r/t/e species and unique habitats statewide, and, at the same time, saved industry money through early planning of proposed activities. In addition to reviewing projects that require permits, the LNHP is responsible for issuing permits for scientific collecting, nuisance animal control, and raptor rehabilitation.

Land protection efforts of the LNHP have also been very productive. Act 324 of the 1987 legislative session created the Louisiana Natural Areas Registry Program, the purpose of which is to protect through a voluntary agreement significant areas throughout the state. The owner voluntarily agrees to manage the area according to a management plan developed by the LNHP staff. The Louisiana Nature Conservancy has been contracted to administer the program. To date, some 48 sites incorporating more than 32,375 acres in 24 parishes have been registered as important natural areas. This includes over 4,900 acres of public lands and more than 32,300 acres of privately owned lands. The LNHP has also been responsible for the purchase by the Department of Wildlife and Fisheries of nearly 600 acres of the Tunica Hills, home to numerous rare plants and animals, including the Louisiana black bear. Currently finalizing purchase of a pine savannah, which houses some 15 rare species of plants.

Other major accomplishments of the Natural Heritage Program include:

1) Publications: The Natural Communities of Coastal Louisiana--Classification and Description, Plants and Animals of Special Concern in the Louisiana Coastal Zone, Atlas and Census of Wading Bird and Seabird Nesting Colonies in Louisiana, Natural Communities of Kisatchie National Forest--Winn and Kisatchie Districts, Louisiana Hummingbirds, and numerous articles in the Louisiana Conservationist. Currently working on a publication on the endangered species of Louisiana.

2) Developed a Cooperative Agreement with the US Fish & Wildlife Service which supplies 75% of the funding for Louisiana endangered species research.

3) Protected, through an agreement with the US Fish & Wildlife Service, the

largest tern and gull nesting colony in the US, located on one of our barrier islands.

4) Completed a Nongame Plan for Louisiana, and coordinated some 37 breeding bird surveys annually for 6 years. Initiated quarterly surveys of pelagic seabirds.

5) Represented the Department of Wildlife and Fisheries on numerous state legislative task forces, including state GIS, Capitol Lake, Freshwater Mussel, and Reptile and Amphibian Task Forces. Also served as department representatives on Office of Forestry's Stewardship Forest Program, DEQ's Leap to 2000 Comparative Risk Program, the Black Bear Conservation Committee, and Red Cockaded Woodpecker Conservation Committee.

6) Completed a bog management plan for Kisatchie National Forest, currently being implemented by the national forest. Initiated a 3-year survey of the natural communities of Kisatchie National Forest and recommended a Research Natural Area be developed on the forest. Initiated a 20-month survey of r/t/e species and unique natural communities on Fort Polk Military Installation.

7) Initiated and currently developing a mitigation banking program with the Nature Conservancy and numerous state and federal resource agencies to mitigate the loss of wetland pine savannahs, an endangered natural community in southeast Louisiana.

8) Aided the La. Nature Conservancy in developing a conservation easement with International Paper for Copenhagen Prairie in Caldwell Parish.

9) Conducted status surveys for several plants and animals for US Fish & Wildlife Service to determine the federal status as threatened or endangered.

10) Currently developing an Atlas of the Flora of Louisiana.

13 April 1992

For more information about the Louisiana Natural Heritage Program, contact Gary Lester, Coordinator, Natural Heritage Program, Louisiana Department of Wildlife & Fisheries, P.O. Box 98000, Baton Rouge, LA. 70898-9000 or (504) 765-2821.

SPECIES LISTED BY THE U.S. GOVERNMENT AS

THREATENED OR ENDANGERED

IN LOUISIANA

1993

Isoetes louisianensis Thieret
Louisiana quillwort
Federal Status: [redacted]
State Status: Unprotected

Description: *Isoetes louisianensis*, or Louisiana quillwort, is a member of the Isoetaceae, a family of primitive seedless plants closely related to ferns. It is a small, semi-aquatic plant whose narrow rush-like leaves arise from a distinctive two-lobed corm. *I. louisianensis* is a tetraploid (2n=44) whereas most other *Isoetes* taxa are diploid (2n=22). This suggests that the taxon is of hybrid origin and that it has speciated through a doubling of its chromosomes. The plant occurs singly or in tufted clumps of several hundred on sand and gravel bars in small to medium sized creeks. Louisiana quillwort has been found growing in association with aquatics *Orontium aquaticum*, *Potamogeton pusillus*, and *Sparganium americanum*, as well as with *Viola primulifolia*, *Scirpus divaricatus*, *Justicia lanceolata*, *Hypoxis leptocarpa*, and the liverwort *Pallavicinia lyellii*.

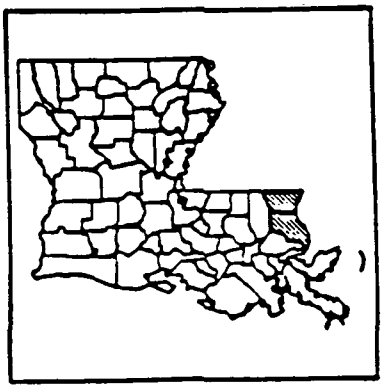
Habitat: Sand/Gravel Beach/Bar in small to medium sized creeks of small stream riparian/bayhead forest communities.

Distribution: Known only from Louisiana in the East Gulf Coastal Plain physiographic province in the Pleistocene Prairie Terrace formation, within the Bogue Chitto River drainage system in Washington Parish and the Bogue Falalya River system in St. Tammany Parish.

Reasons for rarity: Two reasons are primary: 1) Suitable sand/gravel stream habitat of a particular hydrology and size is rare in Louisiana. *Isoetes louisianensis* is apparently dependent upon a special hydrologic regime resulting from the presence of small springs scattered at the base of banks or bluffs along the stream. An important affect of this constant influx of water on stream dynamics is the maintenance of water flow during periods of drought. In addition, only certain microhabitats within the stream system provide suitable habitat. 2) Small population size and extent.

Threats: Habitat loss because of landuse practices that significantly alter stream quality and hydrology pose the most serious threat to populations of *Isoetes*. Land management activities that minimize habitat loss include: 1) selective cutting instead of clearcutting for timber management in the stream floodplain, and 2) careful monitoring of water quality in sand and gravel mining and in bridge construction to avoid siltation and sediment pollution.

Recovery actions: *Isoetes louisianensis* is extremely vulnerable due to its limited population size and extent and to the very narrow range of suitable habitat available. The water quality and natural hydrologic regime of the stream systems providing habitat for the Louisiana quillwort should be safeguarded to maintain viable populations of this rare species.



Isoetes louisianensis.

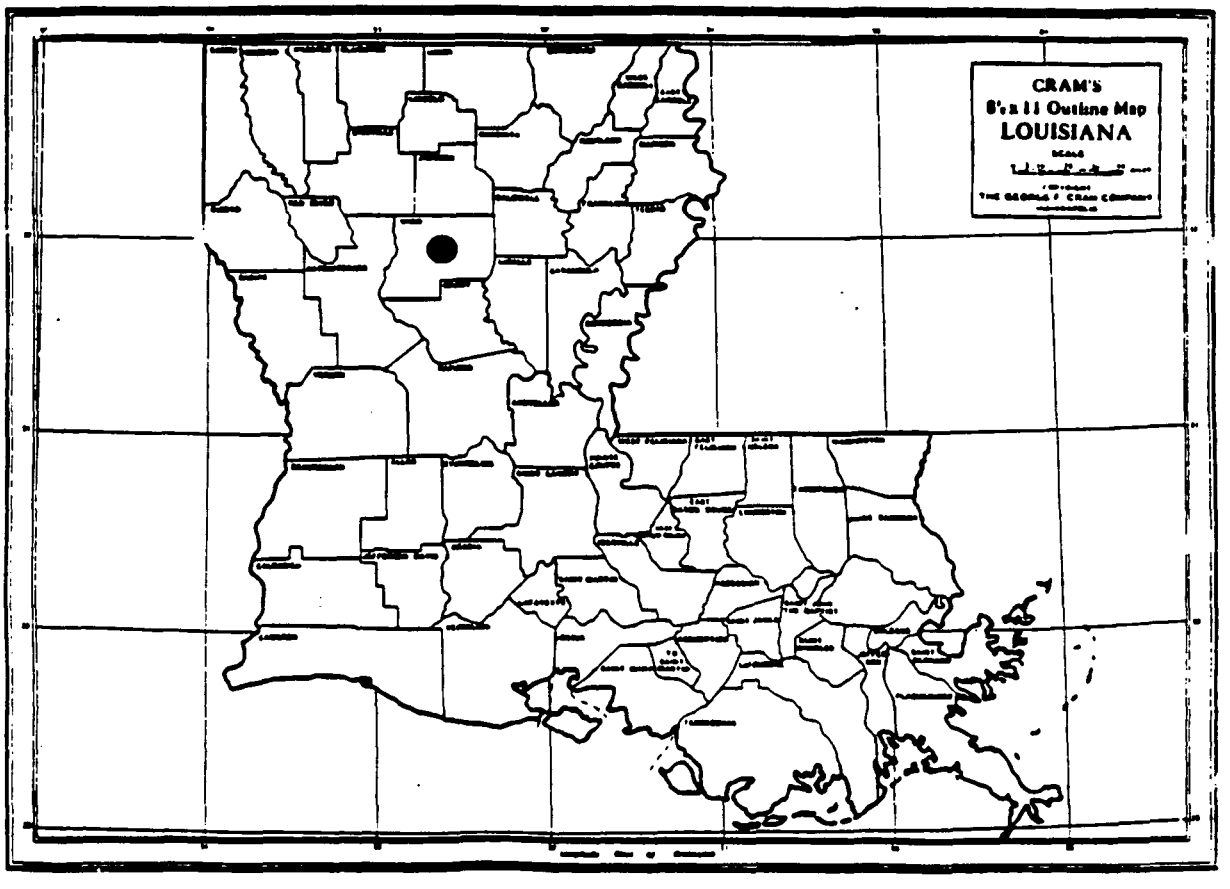
Geocarpon minimum
Earth-fruit
Rank=G2S1

Description: Geocarpon minimum is a diminutive annual herb currently classified in the Caryophyllaceae or "Pink" family. It is easily overlooked in the field due to its small size (<1 to 4 centimeters) and ephemeral life cycle. Flowering plants are purplish-green, turning dull wine-purple to orange-yellow at maturity. The species is somewhat succulent, with opposite leaves, about 5mm long and joined at the base, forming a cup-like shape around the stem at each node. Flowers and fruit are inconspicuous, occurring at the nodes and terminus of the stem. The entire above ground life cycle is complete in approximately 4 weeks, beginning typically in mid-March to early April. In 1987, this species was listed by the U.S. Fish and Wildlife Service as [redacted]ened.

Associated Natural Communities: Terrestrial: Saline prairies.

Distribution: Restricted to high sodium soils of saline prairies in Louisiana. Presently known in the state from one site in Winn Parish. The distribution of this species is very restrictive and evidently habitat specific. Until recently, Geocarpon was known only from Arkansas and Missouri in saline soil prairies and sandstone glades, respectively.

Associated Threats: Surface damage from vehicular traffic, such as off-road vehicles and logging equipment; soil erosion, trash-dumping.



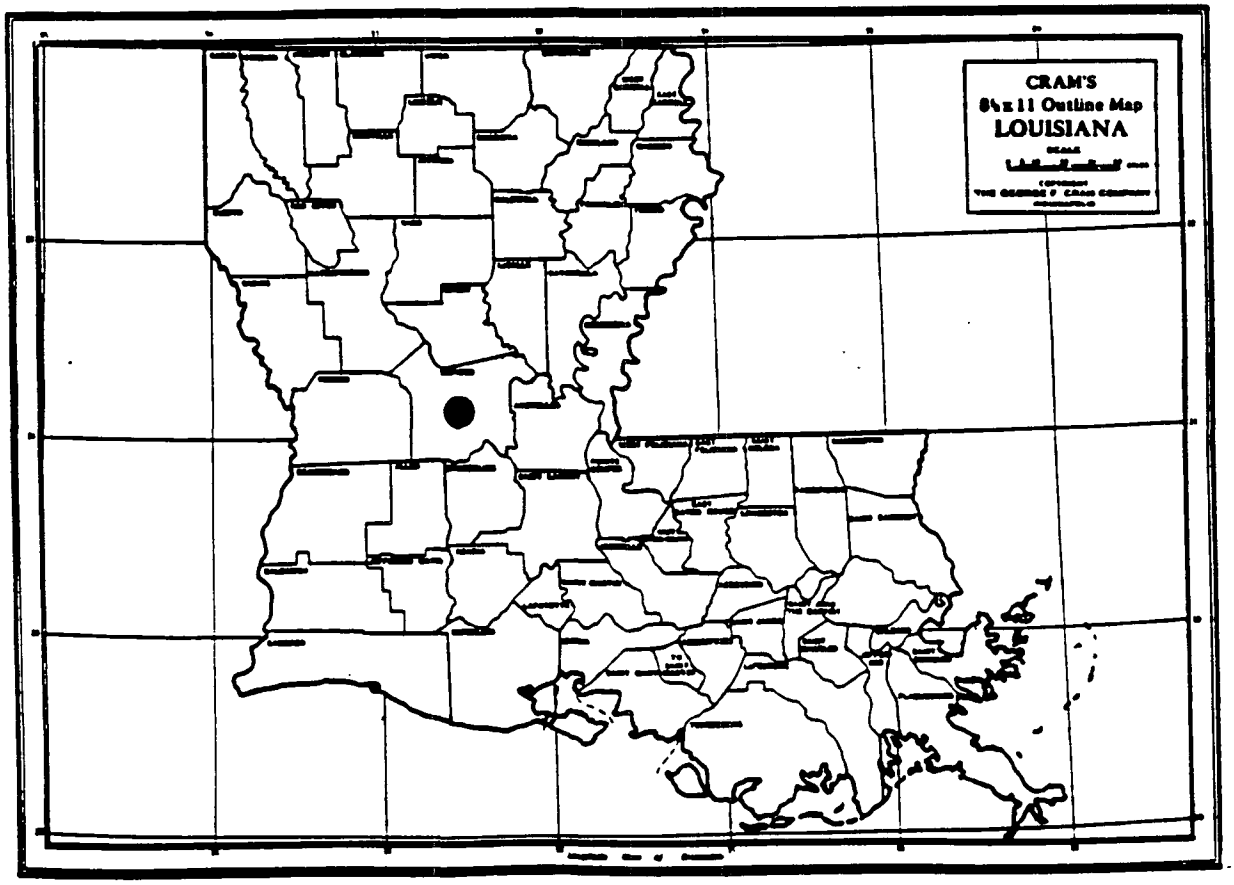
Margaritifera hembeli
Louisiana Pearlshell
Rank=G1S1

Description: The shell of the Louisiana pearlshell is oblong with moderately full beaks without obvious sculpture. The posterior ridge is low, the anterior end is rounded and the ventral margin is generally straight or slightly curved. The shell surface has uneven growth lines and, if sculptured on the posterior end, it is very faint. The epidermis is brown to blackish and the nacre is white to purple with numerous pits. Adults are about 100 mm long, 50 mm high and 30 mm wide. Listed as endangered by the U.S. Fish and Wildlife Service.

Associated Natural Communities: Riverine: Sand/Gravel Beach/Bar.

Distribution: Occurs only in the Bayou Boeuf drainage in Kisatchie National Forest, Evangeline Ranger District, Rapides Parish, Louisiana.

Associated Threats: Siltation, pollution, and other factors affecting water quality.



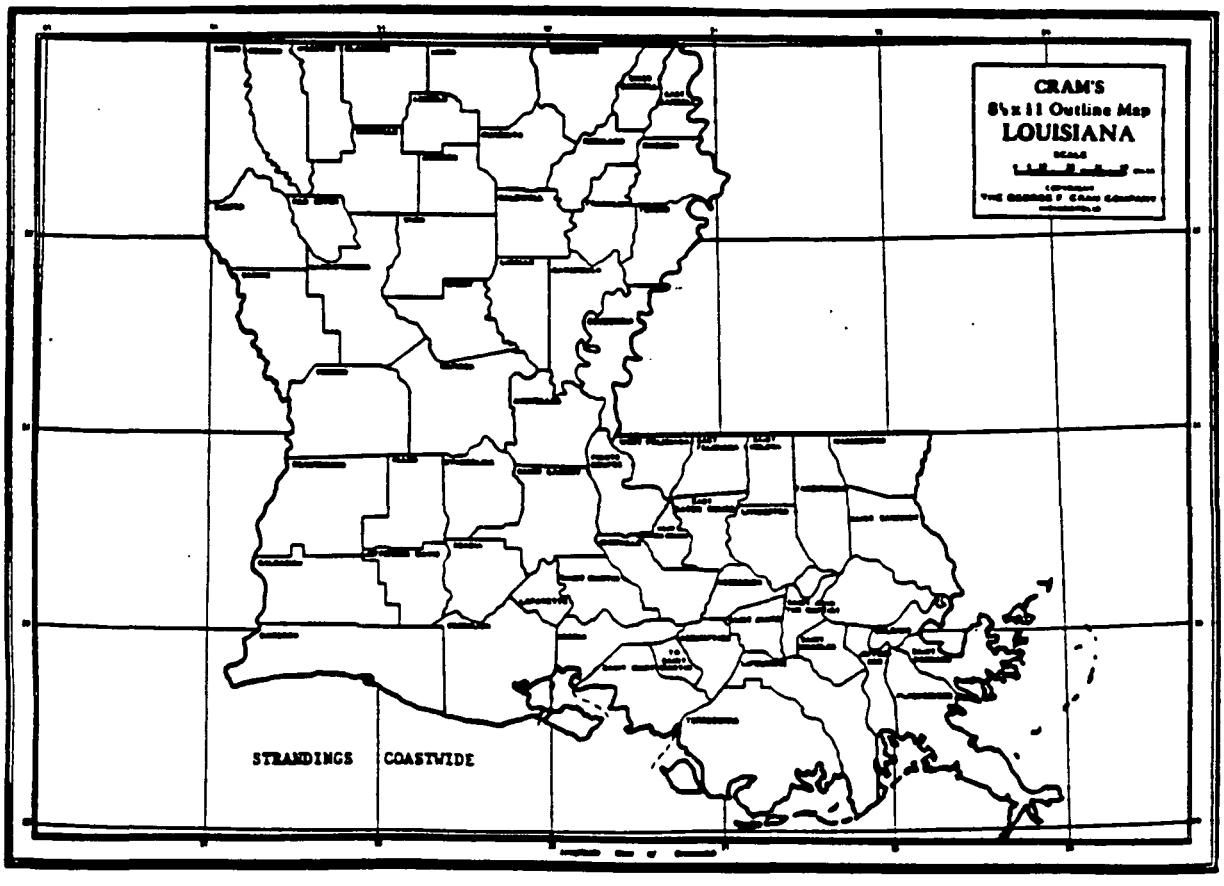
Chelonia mydas
Green Turtle
Rank=G3SN

Description: The common name of this species refers to the color of the body fat not the general coloration of the shell, which is brownish, sometimes shaded with olive. Carapace often marked with radiating, mottled pattern. Field marks to look for are 4 costal scutes, the first one not touching the nuchal, and 1 pair of prefrontal scales (Figure 84). The length of the shell in adults is usually 0.9-1.2 m but may be greater than 1.4 m. Adults weigh between 113 and 204 kg with 1 recorded over 295 kg.

Preferred habitats include shallow water bays, estuaries, and shoals containing an abundance of submerged aquatic vegetation. This species is unique among sea turtles in its ability to digest plant material. However, hatchlings and yearlings are primarily carnivorous and adults occasionally eat marine animals, especially jellyfish.

Associated Natural Communities: Marine: Deepwater, Shallow Water, Submergent Vascular Vegetation; Estuarine: Submergent Vascular Vegetation, Bay.

Distribution: Found throughout the warmer waters of the world. Green turtles were once one of the most abundant sea turtles but they are also considered the most palatable and have been heavily exploited for food. In Louisiana, this species is relatively rare, with most sightings from the eastern coast. Listed as threatened or endangered (depending on nesting [illegible]) by the U.S. Fish and Wildlife Service.



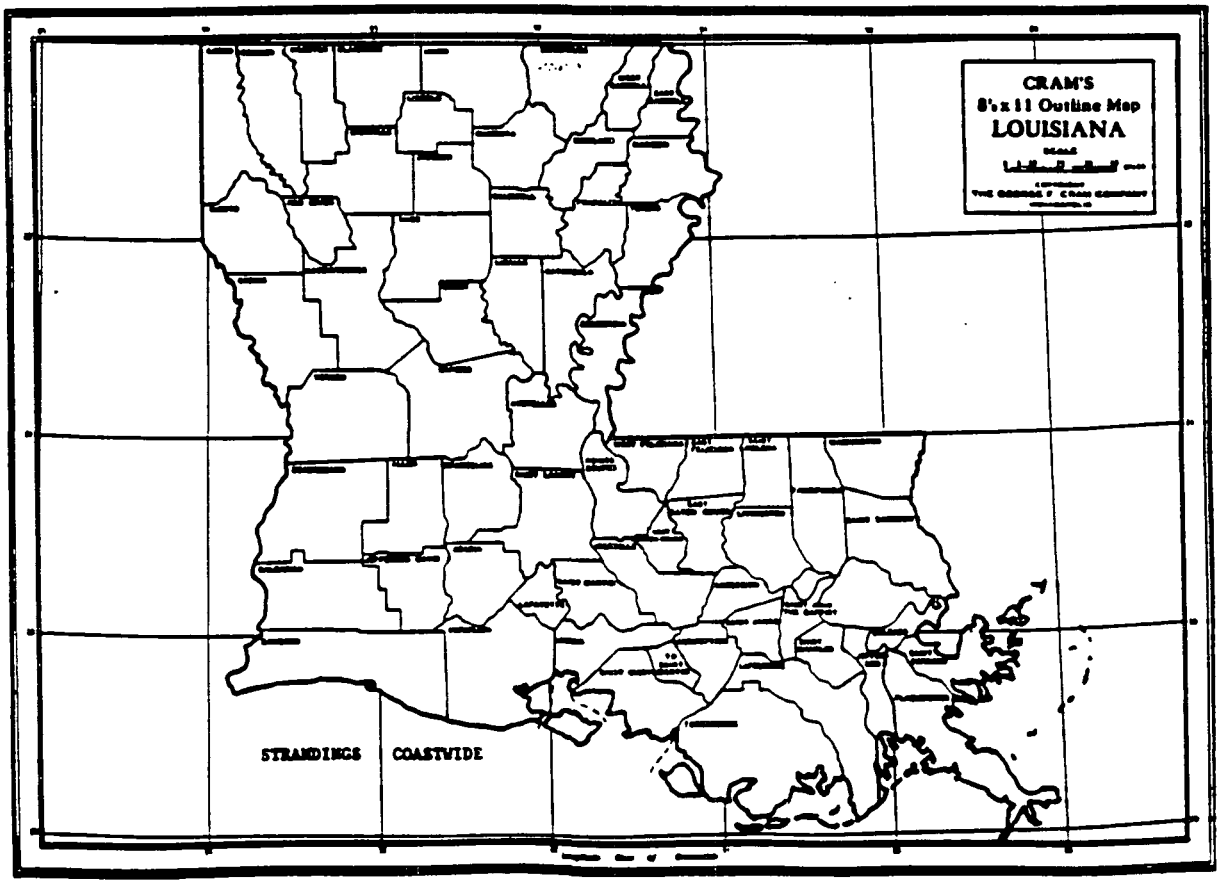
Eretmochelys imbricata
Hawksbill Sea Turtle
Rank=G3?SN

Description: The hawksbill is often considered the most beautiful of all sea turtles because of the amber scutes on the carapace that are usually streaked with red-brown, black, and/or yellow. Additional distinctive characters include overlapping carapace scutes, except in very old individuals; a keel down the center of the carapace; 4 coastal scutes, the first not touching the nuchal (Figure 84); and 2 pairs of prefrontal scales. One of the smaller sea turtles with adult shell length usually 76-89 cm. Adults usually weigh between 43 and 75 kg but may grow as large as 127 kg.

Frequents warm, shallow water habitats (less than 20 m in depth) such as bays, shoals, and coral reefs. This species is omnivorous and eats a variety of plants and animals such as submergent vegetation, crustaceans, mollusks, jellyfish and sea urchins. These turtles were formerly a commercial source of "tortoise shell" and exploitation for the shells along with harvesting for meat and eggs, has greatly depleted many hawksbill populations.

Associated Natural Communities: Marine: Deepwater, Shallow Water, Submergent Vascular Vegetation; Estuarine: Submergent Vascular Vegetation, Bay, Tidal Pass.

Distribution: Found in warm water regions worldwide. In Louisiana and other coastal regions of the Gulf of Mexico, this is one of the most infrequently encountered sea turtles. Listed as endangered by the U.S. Fish and Wildlife Service.



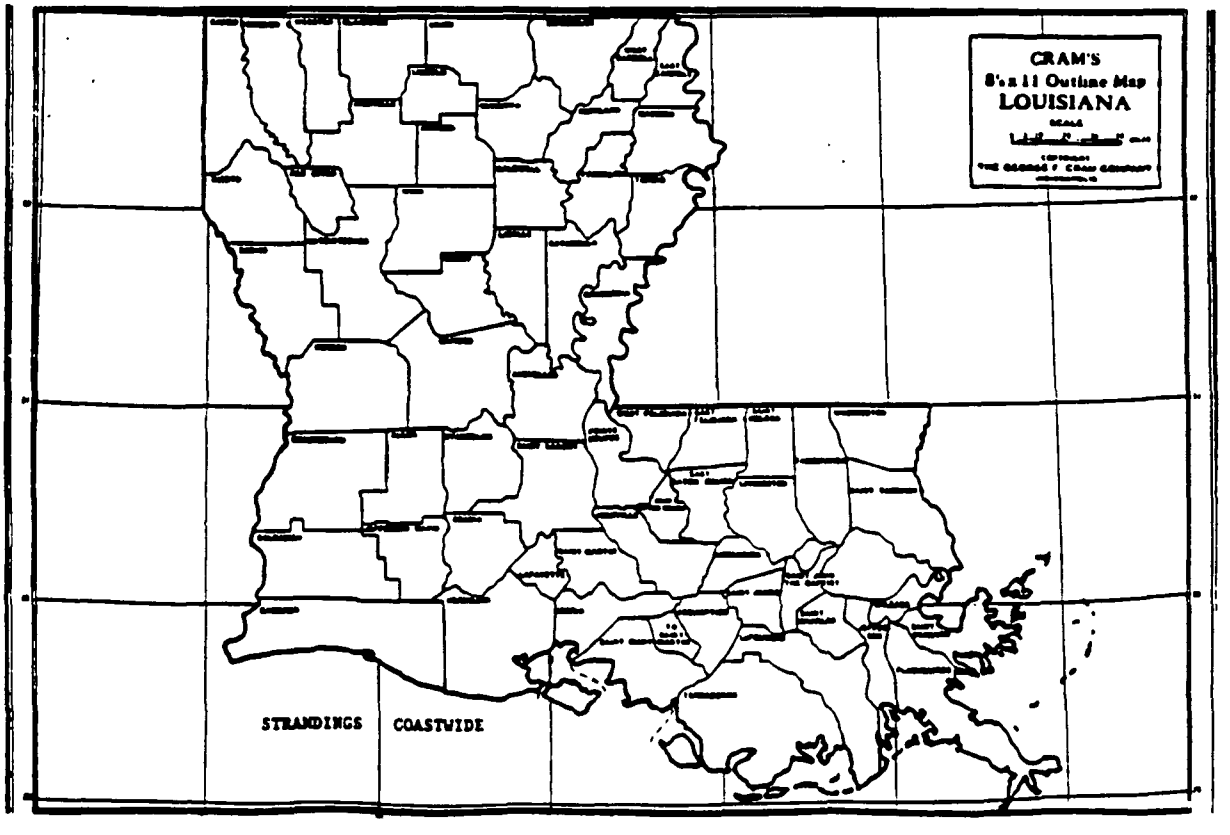
Lepidochelys kempii
Kemp's Ridley Sea Turtle
Rank=G1S1

Description: This is our only sea turtle with an almost circular carapace. The carapace varies in color and may be dark grey, brown, black, or olive. Distinguishing features are 2 pairs of prefrontal scales; 5 or more costal scutes, with the first pair touching the nuchal; and 4 (rarely 5) large scutes on the bridge, each with a pore on the posterior edge (Figure 84). As adults, ridleys are the smallest sea turtles weighing 36-45 kg with a carapace 50-70 cm in length; large individuals may have a shell up to 75 cm.

Kemp's ridleys prefer sheltered areas along the coast, such as bays, bayous, and estuaries, during the non-nesting period. Although this species does not nest in Louisiana, the estuarine and off-shore waters of Louisiana may afford key feeding and developmental sites. In addition, some of the deepwater channels and estuaries in Louisiana may provide important hibernation sites. Ridleys eat a variety of aquatic animals such as crustaceans, mollusks, fish, jellyfish, squid, and starfish.

Associated Natural Communities: Marine: Submergent Vascular Vegetation; Estuarine: Salt Marsh, Brackish Marsh, Submergent Vascular Vegetation, Intertidal Saltwater Swamp, Bay, Tidal Pass.

Distribution: Ridleys are primarily restricted to the Gulf of Mexico although juveniles may be carried in the Gulf Stream into the Atlantic as far as New England and Europe. Most of the nesting is restricted to a narrow stretch of beach near Ranch Nuevo, Tamaulipas, Mexico. The number of nesting females has declined from an estimated 42,000 in the 1940's to 621 in 1982. The decline has been so drastic that, in spite of conservation efforts, recovery of this species is in question. Next to the loggerhead, this is the most commonly encountered sea turtle in Louisiana, with most of the records from the southwest and southeast coast. Listed as endangered by the U.S. Fish and Wildlife Service.



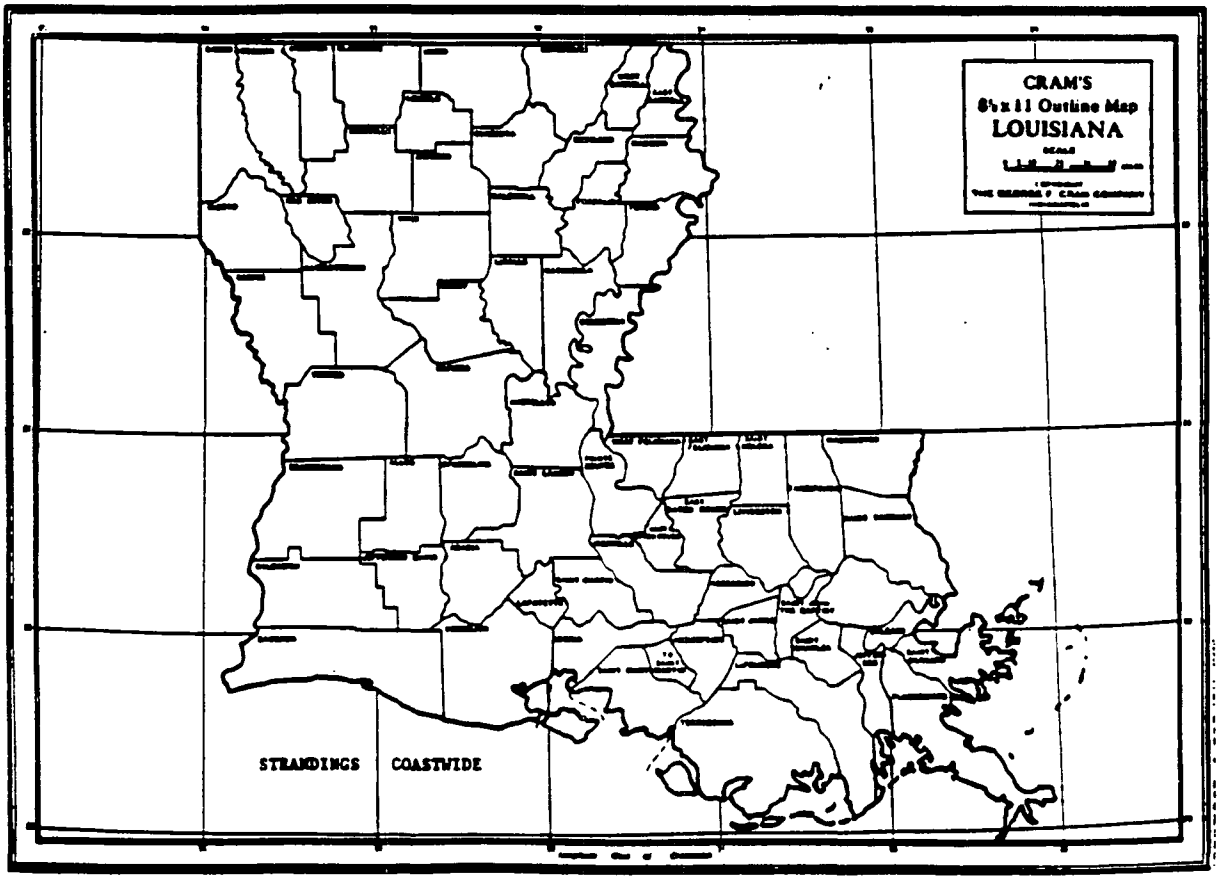
Dermochelys coriacea
Leatherback Sea Turtle
Rank=G3SN

Description: Most distinctive of the sea turtles, with a barrel-shaped body and a rubber-like covering over the plastron and carapace (Figure 84). Additional characters include prominent longitudinal ridges on the carapace, and very large front flippers; claws absent. Neck short and incompletely retractile. Dorsal coloration blackish, undersurface mostly pinkish-white. Largest of all turtles with average adult carapace length 1.6 m; maximum length 1.8 m. Average weight about 360 kg, up to 590 kg.

Primarily an open ocean species that may dive to great depths. Adaptations for cold, deep water include proportionately large flippers, the potential to exchange gasses through the skin and the ability to maintain its body temperature above ambient temperature. Feeds primarily on jellyfish.

Associated Natural Communities: Marine: Deepwater.

Distribution: Found nearly worldwide during the non-breeding period but nesting beaches are primarily between 30 degrees north and 20 degrees south latitude. Harvesting adults for food and oil has contributed to the decline of several nesting populations. In Louisiana, this is one of the least recorded sea turtles because of its preference for open water; however, it may be found anywhere along the coast. Listed as [redacted] by the U.S. Fish and Wildlife Service.



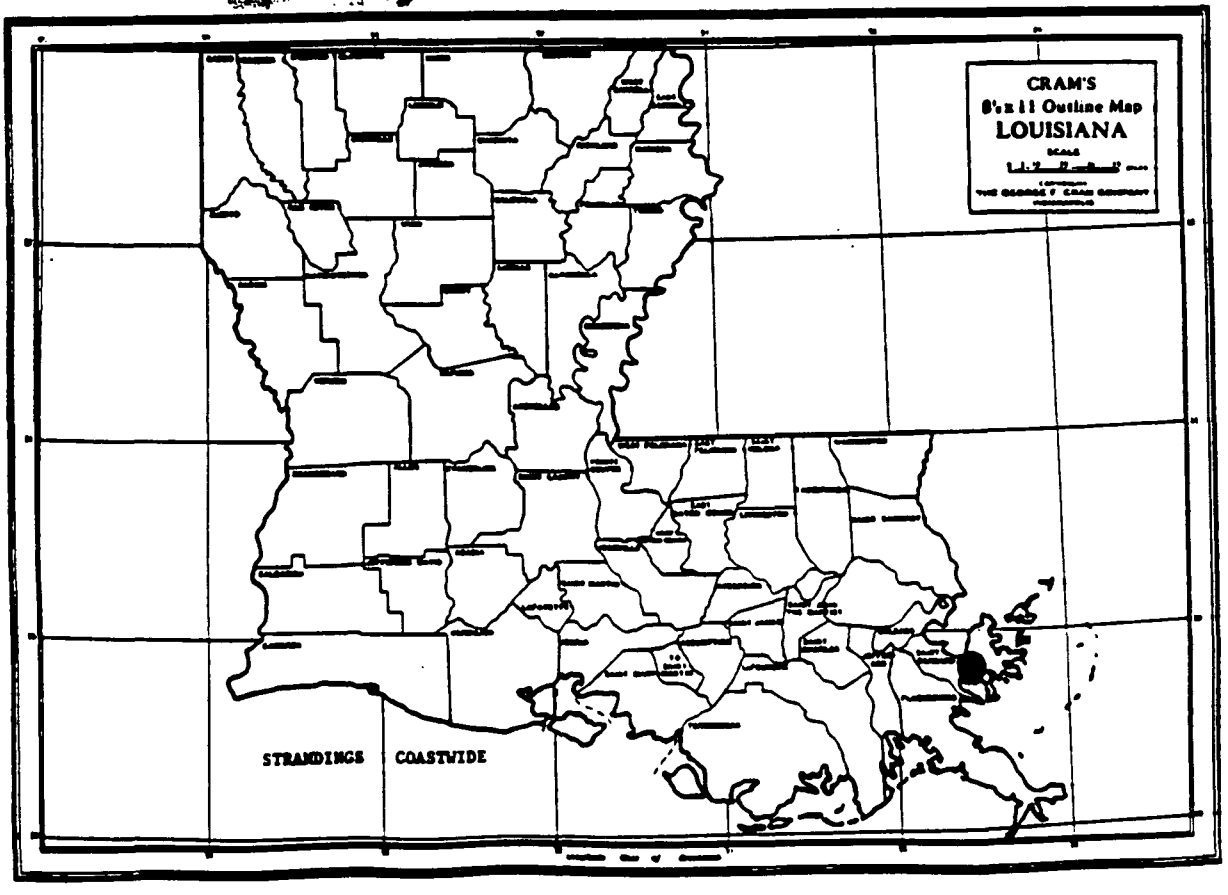
Caretta caretta
Loggerhead Sea Turtle
Rank=G3S1

Description: The reddish brown coloration of the carapace and yellowish plastron aid in the identification of this species. Other diagnostic features include 5 or more costal scutes, and the first one always touches the nuchal; (Figure 84). Large, block-like head. The carapace length of full-grown adults averages about 1.1 m with a maximum measured length of 1.2 m. Adults may weigh more than 227 kg.

Loggerheads generally inhabit warm water over the continental shelf and regularly enter marshes, estuaries and coastal rivers. Ideal nesting habitat is provided by well-drained dunes with clean sand and scattered grassy vegetation. Females lay an average of 2 clutches (range 1-7) of 60-80 eggs per season. Most females nest on 2-year or 3-year intervals. Nesting in Louisiana usually occurs between May and August, with a peak in late June. This species is omnivorous, feeding on aquatic plants, crustaceans, mollusks, jellyfish, squid, sea urchins and fish.

Associated Natural Communities: Marine: Deepwater, Shallow Water, Intertidal Sand/Mud/Shell Beach/Bar, Submergent Vascular Vegetation; Estuarine: Salt Marsh, Bay, Tidal Pass; Terrestrial: Coastal Dune Grassland.

Distribution: Primarily found in the warm water of the Atlantic basin but may range as far north as Canada or as far south as Argentina. In Louisiana, this species has been found throughout the coastal region, but nesting has only been recorded from the Chandeleur Islands; 32 crawls observed in 1960, only 4 in 1977. Listed as threatened by the U.S. Fish and Wildlife Service.



Gopherus polyphemus
Gopher Tortoise
Rank=G2S1

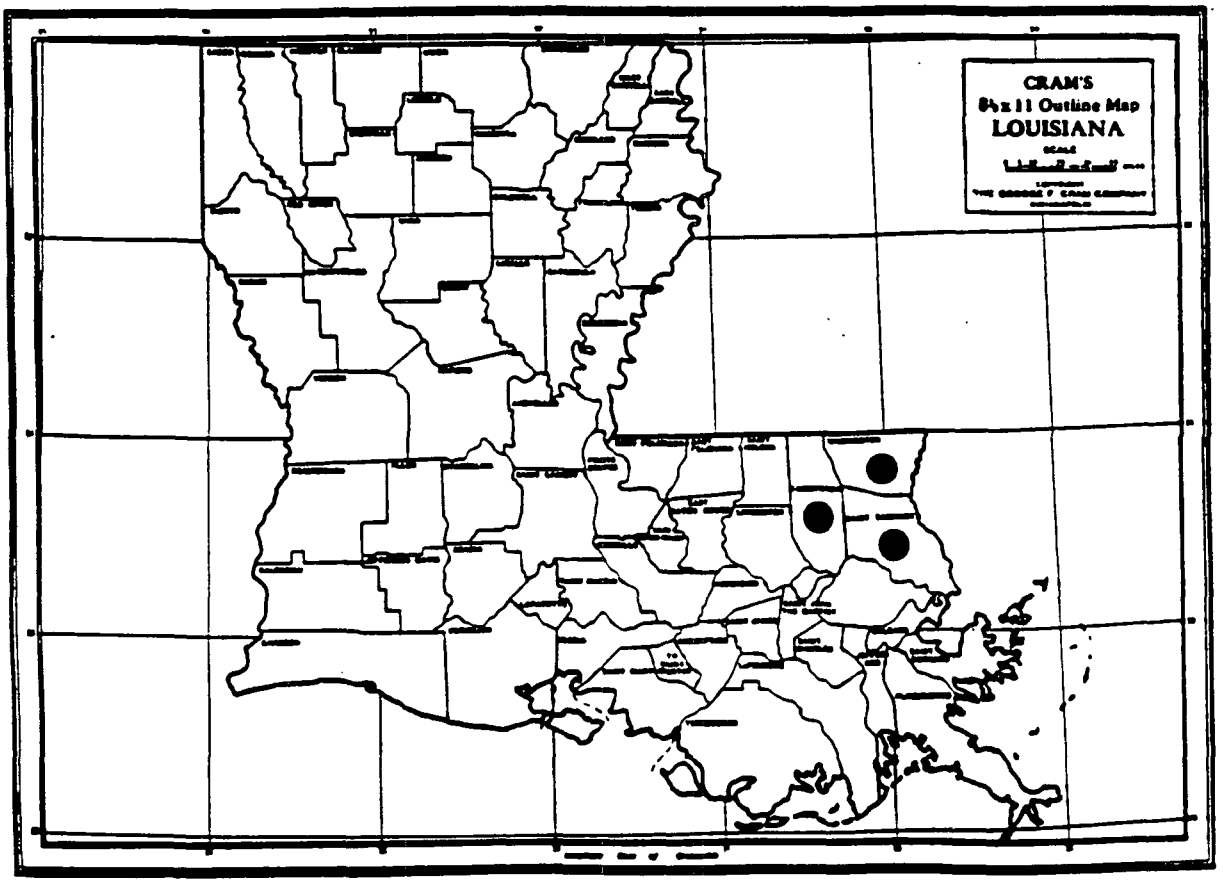
Description: A large dark-brown to grayish-black terrestrial turtle with elephantine hind feet and shovellike forefeet. The center of the carapace scutes and the entire plastron of hatchlings is a bright yellow-orange. Adult males have a prominent projection on the anterior portion of the plastron. The plastron is yellowish and unhinged. The plastron of adults average about 28 cm in length.

No other tortoise depends on burrows to the extent that the gopher tortoise does. Burrows, which may be nearly 15 m long and 2 m below the ground surface, provide protection from winter cold and summer heat. The entrance to the burrows is a distinctive "half-moon" shape. An average of 6 eggs are buried in a shallow nest, often near the entrance to the females burrow. Grass and small herbaceous plants make up most of the diet, although carrion, berries, fungi, etc. are also eaten. Those animals found west of the Mobile and Tombigbee rivers in Alabama are listed as threatened by the U.S. Fish and Wildlife Service.

Associated Natural Communities: Terrestrial: Upland Longleaf Pine Forest, Mixed Hardwood-Loblolly Forest. Soils must be well-drained.

Distribution: Coastal plain from South Carolina through Florida to eastern Louisiana.

Associated Threats: 1) Conversion of natural forests of longleaf pine to loblolly plantations, agriculture and urban areas. 2) Absence of fire. 3) Take for food or pets.



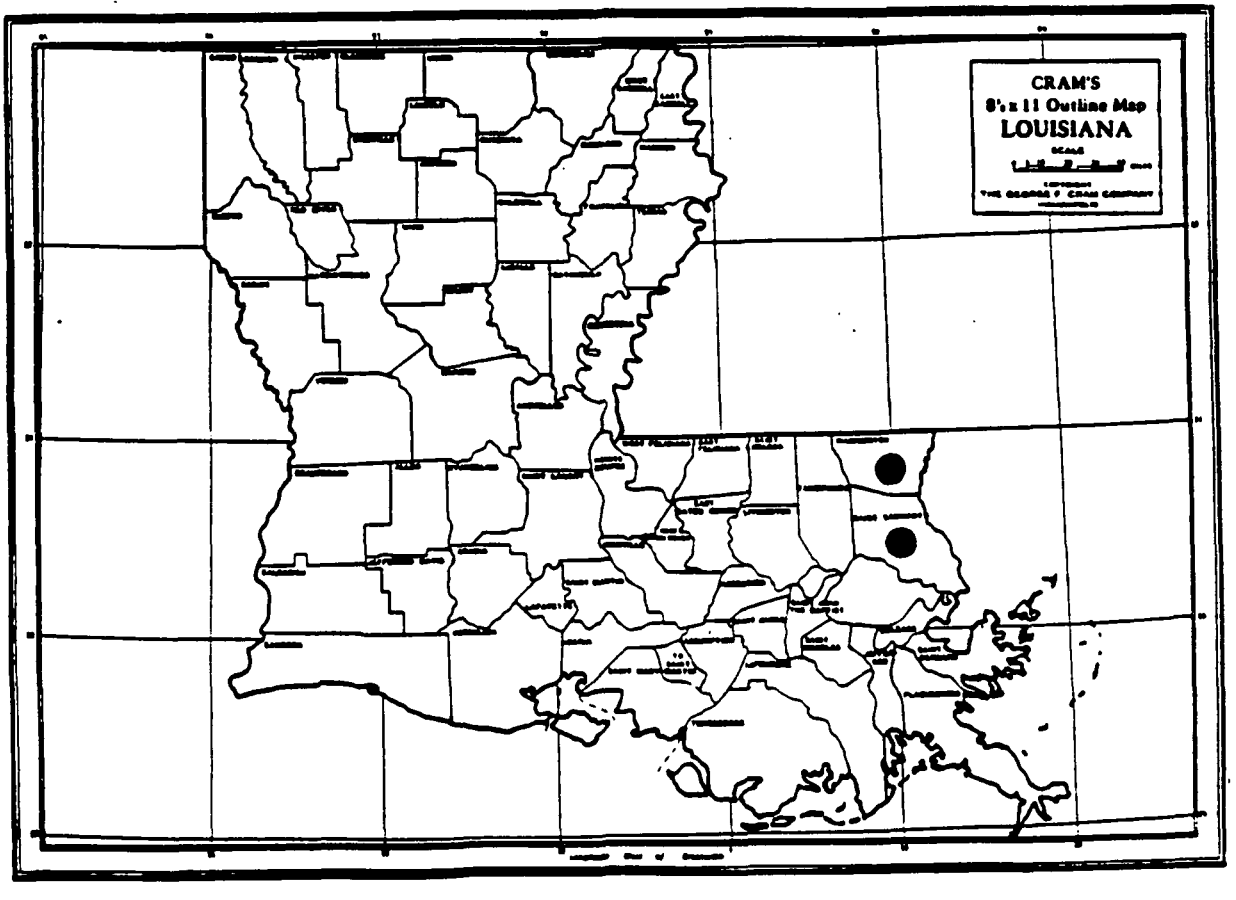
Graptemys oculifera
Ringed Sawback Turtle
Rank=G2S2

Description: Background carapace color dark olive brown with a broad yellow to reddish ring on the coastal scutes. Head conspicuously marked with a large yellow spot behind each eye, 2 yellow stripes radiating backward from the eyes, and a mostly yellow lower jaw. Prominent dorsal spines in juveniles and males, less so in adult females. Relatively small turtle; carapace length in adult males 8-10 cm, adult females 12-22 cm.

Generally inhabits clean rivers having a moderate current, an open canopy, and numerous nesting beaches and basking logs. Ideal nesting beaches are islands composed of clean, fine grain sand, with a minimum of vegetative cover and a minimum elevation of 1-3 m above river level. Matures at approximately 5 years of age. Apparently nests during the day and females generally produce 3-4 clutches of 5-6 eggs annually. Feeds primarily on insects although small fish, mollusks and carrion are also consumed.

Associated Natural Communities: Riverine: Sand/Gravel Beach/Bar, Lower Perennial Open Water.

Distribution: Endemic to the Pearl and Bogue Chitto River drainages in Louisiana and Mississippi. In Louisiana, this species is relatively uncommon south of Bogalusa in the Pearl River and has been seen as far upstream as Franklinton in the Bogue Chitto River. Listed as threatened by the U.S. Fish and Wildlife Service.



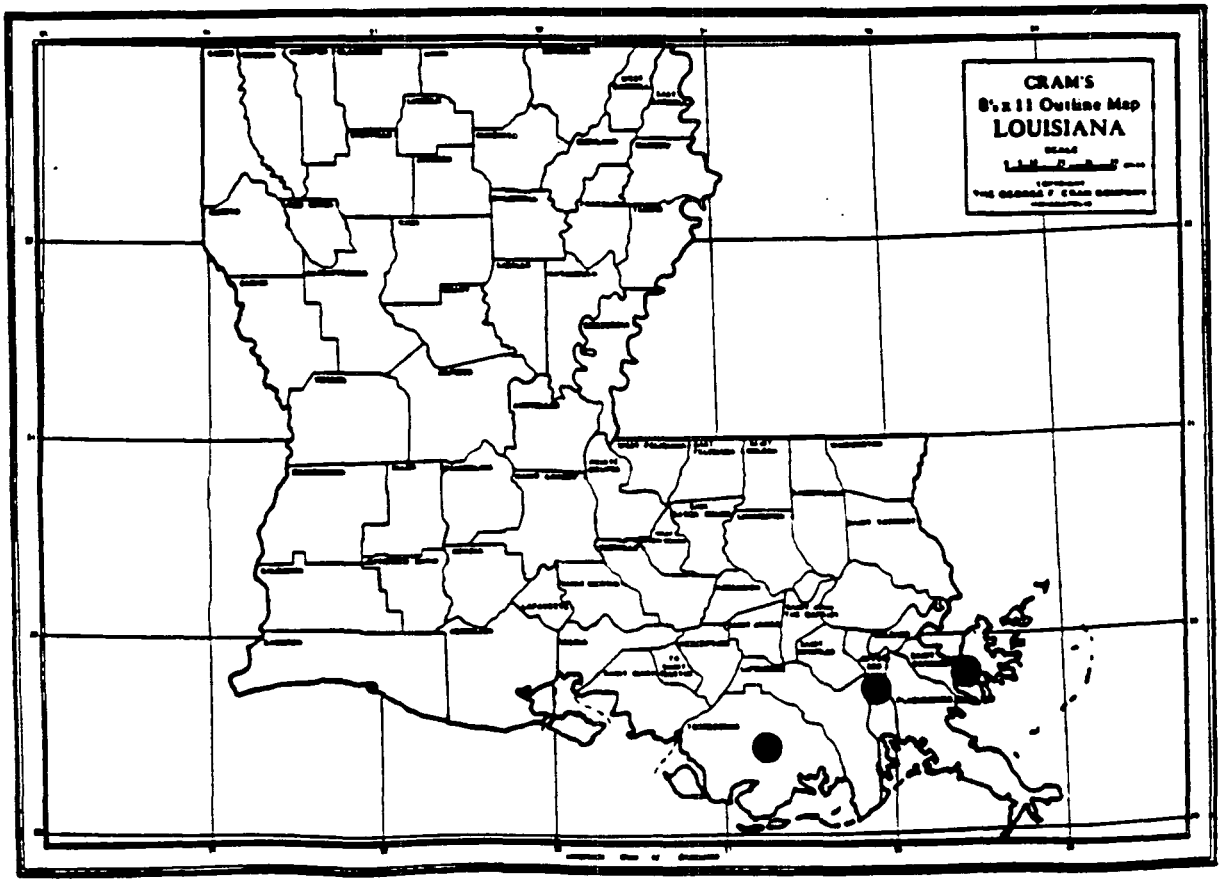
Pelecanus occidentalis
Brown Pelican
Rank=G5S1S2 (nesting)

Description: Unmistakable, large brown waterbird with long, flat bill and distendable gular pouch. Body plumage of adults gray-brown to silver-brown; primaries and secondaries darker. Head and neck of non-breeding adults white. Hindneck and nape cinnamon-brown during the breeding season. Bill gray to brown. Immature generally brown with some pale mottling on wings and neck; underpart whitish. In flight, neck is retracted heron-style. Adults 107-137 cm long, wingspread to 2.4 meters.

Usually found in small flocks. Flies just above water surface; in contrast to White Pelican, rarely soars. Usually found in bays, tidal estuaries or along the coast. Lays clutch of 2-3 (usually 3) eggs in nest on ground or in low shrubs between November and July. Renesting after failed nesting attempt common.

Associated Natural Communities: Marine: Deepwater, Shallow Water, Intertidal Sand/Mud/Shell Beach/Bar; Estuarine: Intertidal Saltwater Swamp, Bay, Tidal Pass; Terrestrial: Coastal Dune Shrub Thicket.

Distribution: Currently nests in scattered colonies from southern California and North Carolina south along the coast to Chile and Venezuela. In Louisiana, formerly an abundant resident with more than 50,000 birds present in 1919. Extirpated by 1963, probably due to organochloride accumulations. Subsequent reintroduction efforts have re-established nesting colonies on North Island, St. Bernard Parish, Queen Bess/Camp Islands, Jefferson Parish, and Isle Dernieres, Terrebonne Parish. May be observed in near-shore waters throughout the eastern one-half of the Louisiana coastal region during the non-breeding season; very rare west of Atchafalaya Bay. Listed as [redacted] by the U.S. Fish and Wildlife Service.

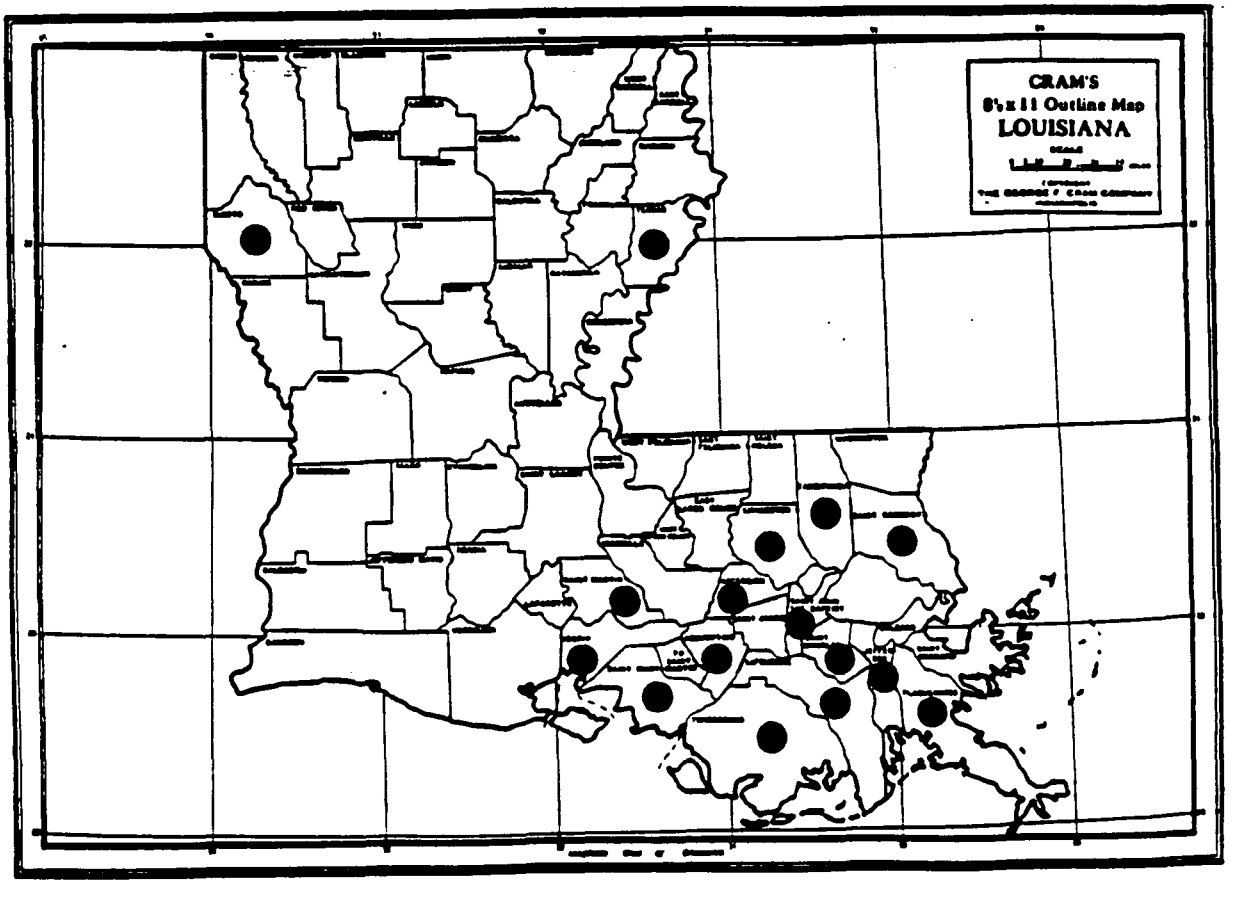


Haliaeetus leucocephalus
Bald Eagle
Rank=G3S3 (nesting)

Description: Very large raptor. Adults unmistakable; dark brown body, head and tail white, large yellow bill. Immatures dark brown with pale underwing coverts and irregular light base of tail; bill black. Subadults intermediate between immatures and adults, and exhibit various amounts of white mottling on body; 4-5 years required to attain adult plumage. Wings very long, broad and rounded at the tip; primary feathers often widely separated and wings held flat when soaring. Adults to 1.1 m in length, wingspread to 2.3 meters. Immature Golden Eagle (*Aquila chrysaetos*) resembles immature Bald Eagle but has distinct white mottling on the flight feathers and well-defined band at base of tail; bill smaller.

Long lived (30-50 years). Louisiana birds nest in winter and early spring, whereas those at northern latitudes nest much later. Nests very large (up to 2.5 m across and 3.5 m deep) and used year after year. Eggs 1-3 (usually 2). Incubation period about 35 days; young fledge 72-75 days after hatching. Generally found near water with several large trees or snags nearby. Feeds on self-caught or robbed fish; also consumes waterfowl, coots, muskrats and nutria.

Associated Natural Communities: Estuarine: Intermediate Marsh, Bay, Tidal Pass; Lacustrine: Marsh Lake, Swamp Lake; Palustrine: Freshwater Marsh, Cypress-Tupelo Swamp, Cypress Swamp, Batture; Riverine: Subtidal Open Water, Lower Perennial Open Water.



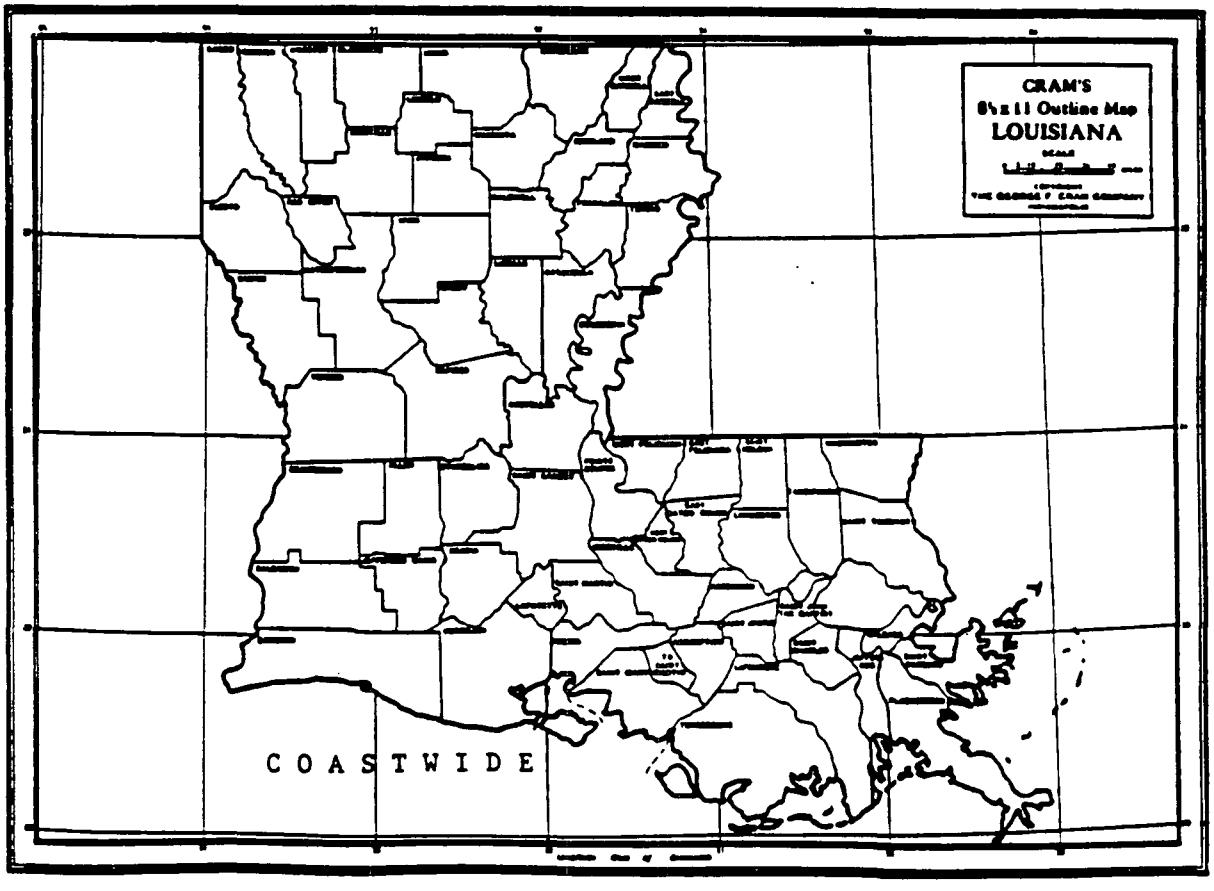
Falco peregrinus
Peregrine Falcon
Rank=G3S2 (winter)

Description: Large falcon. Adults bluish to dark gray above with a dark head and dark malar stripe. Buff to cinnamon below with dark spotting on the belly and strongly barred flanks, tail long, barred. Bill grayish; cere and legs yellow. Immatures brownish to bluish-brown with dark malar stripe and heavy dark streaking on underparts. Adults to 51 cm total length; wingspread to 1.2 m. The only other similar falcon found in Louisiana is the Merlin (*Falco columbarius*), which is smaller, heavily streaked underneath, has an indistinct malar stripe, and posses a light eyebrow line.

Usually solitary except during the nesting season. Primarily nests on cliffs but in southern U.S. nested (formerly) in hollows of old, large trees. In winter generally found in open areas along the coast. Birds are the most common prey; also consumes small mammals, insects.

Associated Natural Communities: Estuarine: Salt Marsh, Brackish Marsh, Intermediate Marsh, Intertidal Sand/Shell Flat, Intertidal Mud/Organic Flat; Lacustrine: Marsh Lake; Palustrine: Freshwater Marsh.

Distribution: Formerly one of the most widespread birds; nested in all regions of the world except Antarctica. Now greatly reduced in numbers and distribution spotty. A nest found by Roger Tory Peterson near Tallulah, Madison Parish, in 1942 is the only reported nesting record from Louisiana. Within Louisiana, generally restricted to the coastal region in winter but may be seen statewide during migration. Listed as [redacted] by the U.S. Fish and Wildlife Service.



Grus americana
Whooping Crane
Rank=G1SH

Description: Very large, long-necked wading birds. Adults are unmistakable being mostly white with black primaries and distal secondaries. Crown red and cheeks reddish-black, both unfeathered. Base of bill pink; legs black. Juveniles whitish with cinnamon-brown mottling on back and wings; head completely feathered and brownish; wingtips black. Adults are the tallest birds in North America; to 1.5 m total length. Wingspread to 2.3 m. Plumage color similar to American White Pelican (see species account). Wood Stork (*Mycteria americana*) is also similar but entire head and neck naked, and bill decurved an stout at base. Superficially resembles the much smaller snow goose in flight. Immature resembles immature sandhill crane (see species account).

Found in small family groups, unlike sandhill cranes. Flys with neck and legs outstretched. Winters in coastal marshes.

Associated Natural Communities: Estuarine: Brackish Marsh, Intermediate Marsh; Palustrine: Freshwater Marsh; Terrestrial: Coastal Prairie.

Distribution: Formerly nested in prairie region of U.S. and Canada, and in the coastal prairies of Texas and Louisiana. Now restricted to south-central Mackenzie and adjacent northern Alberta, Canada. Winters near coast of southern Texas, on and near Aransas National Wildlife Refuge. Introduced in Idaho (no nesting to date); that flock winters primarily in central New Mexico. Formerly a common winter resident and rare nester in the coastal prairies of southwestern Louisiana; extirpated by 1950. Because the Canadian/Aransas population is increasing in size, migrants should be looked for in southwestern Louisiana. Listed as endangered by the U.S. Fish and Wildlife Service.

Numenius borealis
Eskimo Curlew
Rank= G1SH

Description: A relatively large shorebird with a thin, slightly decurved bill. Similar in appearance to the Whimbrel (Numenius phaeopus) but smaller, more slender, and with a straight bill. Body rich brown heavily streaked and spotted with buff. Under-wing linings cinnamon. Light buff eyebrow line. Bill dark brown or reddish-black; legs dark green to blue-gray. Adults to 36 cm total length. Call is a soft whistle: tee-tee-tee.

The most northerly-nesting of any North American curlew. Formerly found in extremely large flocks in the tens of thousands. Generally found in open habitats from tundra to prairie to South American pampas. Feed on a wide variety of insects, other small invertebrates, and berries.

Associated Natural Communities: Estuarine: Salt Marsh, Brackish Marsh, Intermediate Marsh; Palustrine: Freshwater Marsh, Coastal Prairie; Terrestrial: Coastal Dune Grassland.

Distribution: Formerly nested in tundra of Alaska and northwest Canada. Fall migration through Atlantic coast of Canada and U.S. to western South America. Spring migration more westerly: through central America and up the Mississippi River Valley. Nearly extinct, although current status unknown. Listed as endangered by the U.S. Fish and Wildlife Service.

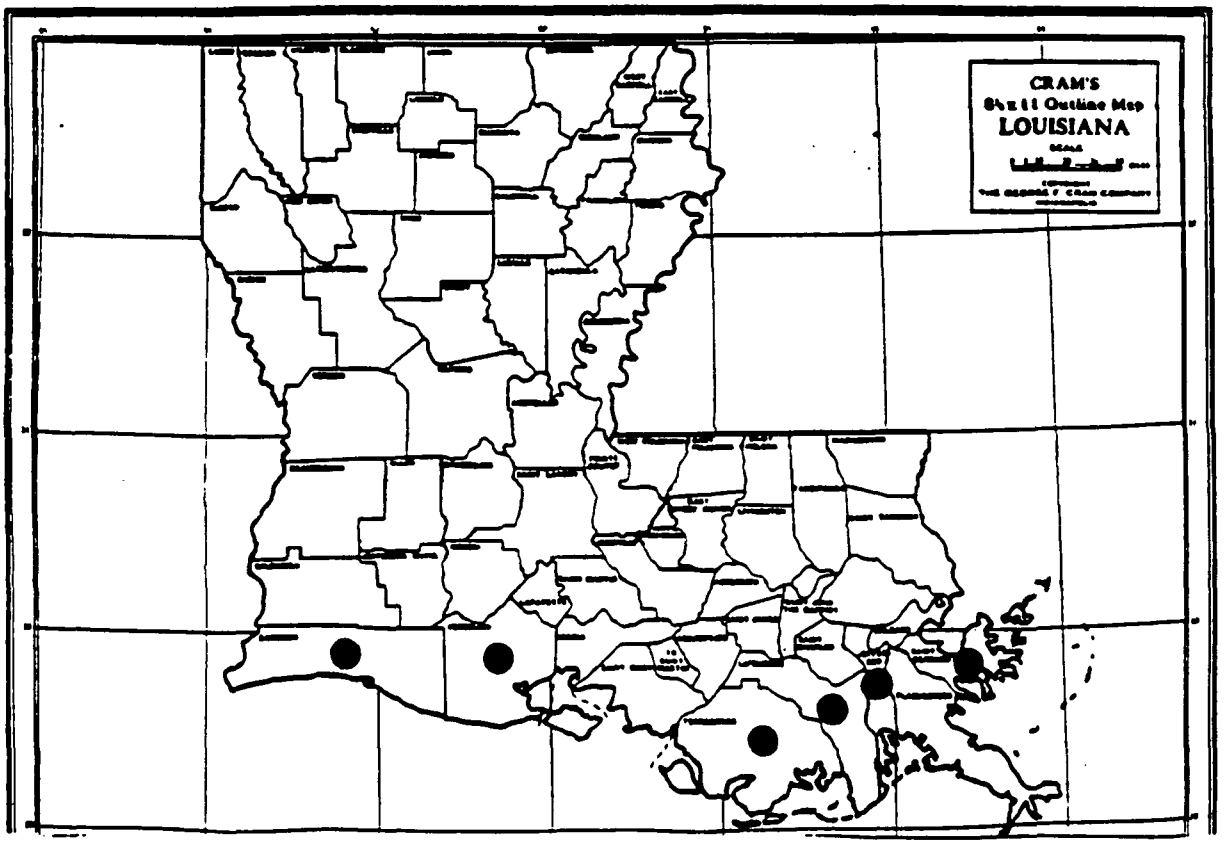
Charadrius melodus
Piping Plover
Rank=G2S2 (winter)

Description: A relatively small plover, light brown to sandy-gray above, white below. Breeding-plumaged adults posses a single, narrow black breast band, a black bar on the front part of the crown that extends to the eyes, a stubby bill with orange base and black tip, and orange legs. Winter-plumaged adults and juveniles are grayer, lack the contrasting black markings, only show a sandy patch on each side of breast and have completely black bills. All plumages have a white rump. Adults to 18 cm total length; wingspread to 39 cm. The similar Snowy Plover (see species account) and Semipalmated Plover (*C. semipalmatus)* lack the white rump; additionally, the former has dark legs and the latter is darker and usually has a complete breast band.

Usually found singly or in pairs; occasionally in small flocks. Generally found on beaches, mudflats or open shorelines of lakes and ponds. Active forager; runs a short distance, pauses, catches a prey item, then continues. Feeds on a variety of aquatic invertebrates such as insects, crustaceans and mollusks.

Associated Natural Communities: Marine: Intertidal Sand/Mud/Shell Beach/Bar; Estuarine: Intertidal Sand/Shell Flat, Intertidal Mud/Organic Flat.

Distribution: Three recognized breeding populations: 1) U.S. and Canadian Great Plains, from Nebraska north to Alberta and Manitoba, 2) beaches bordering the Great Lakes, 3) Atlantic coastal beaches from North Carolina to Newfoundland. Has declined greatly in abundance and distribution in recent years. Winter distribution not well-known, but thought to include the southern Atlantic and Gulf coast, and several Caribbean islands. In Louisiana, a rare migrant statewide and uncommon to rare winter resident along the coast and on barrier islands. One bird observed on Chandeleur Island, St. Bernard Parish, November 1987 had been banded in the prairie region of Canada. Listed as threatened or endangered (depending on nesting range) by the U.S. Fish and Wildlife Service.



Sterna antillarum athalassos
Interior Least Tern
Rank=G4T2S1

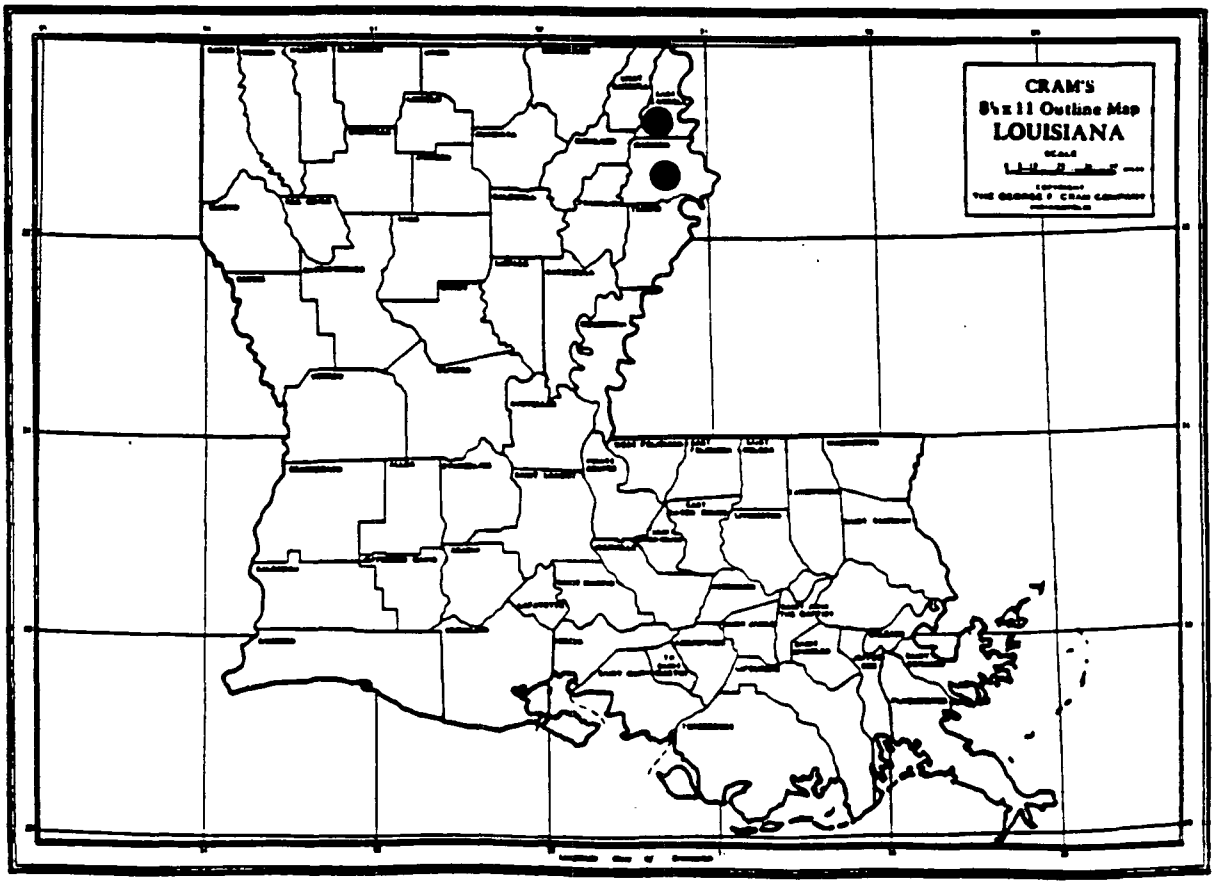
Description: The smallest tern in North America. Sexes are alike, and adults are characterized by a black crown and nape with a black line extending through the eye to the bill. The upperparts are grayish; underparts snowy white. Two outermost primaries black. Tail short but strongly forked. Bill yellow tipped with black. Juveniles mottled above with a dark forewing and black bill. Adults to 50 cm total length.

Very active and vocal tern. During the nesting season, confined to larger rivers with exposed sandbars. Eats a wide variety of surface-dwelling small fish.

Associated Natural Communities: Riverine: Open Water, Sand/Gravel Beach/Bar.

Distribution: Breeds on sandbars within the Colorado, Red, Rio Grande, Arkansas, Missouri, Ohio, and Mississippi River systems. Also breeds on barren flats of saline lakes in Oklahoma. In Louisiana, breeding is known to occur on sandbars in the Mississippi River near Lake Providence. Winters along the Central American coast and the Northern coast of South America from Venezuela to Brazil. Listed as endangered by the U.S. Fish and Wildlife Service.

Associated Threats: Natural and man-made changes in river hydrology, which decrease availability of exposed sandbars.



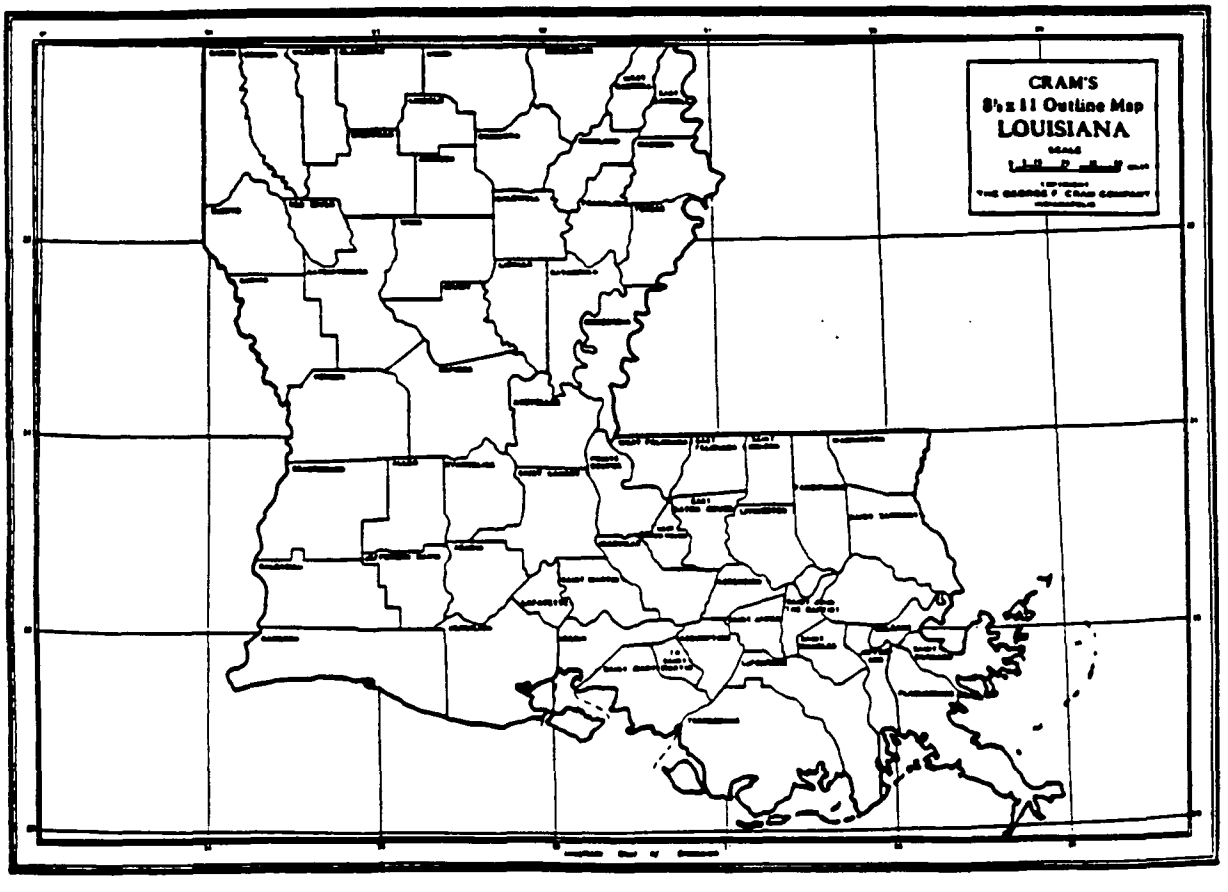
Campephilus principalis
Ivory-billed Woodpecker
Rank=G1SH

Description: The second largest woodpecker in North America, second only to the Imperial Woodpecker (Campephilus imperialis) of Mexico. Plumage glossy black with large white patches on upper portion of wings (distal half of secondaries and innermost primaries), which is visible when perched. White stripe from behind eye, down side of neck onto the back. Underwing linings also white so that two distinct patches of white separated by a black band are visible when flying. Massive ivory-colored bill. Distinct crest; entirely black in females, mostly red in adult males. Adults to 54 cm. Call a loud, nasal "kent". The superficially similar Pileated Woodpecker is smaller, has a dark bill, white striped on the cheeks and throat and the white on underside of wings is limited to one patch on the lining and proximal portion of flight feathers.

Formerly an inhabitant of large tracts of old growth bottomland hardwood forest. Last documented record was from Louisiana in 1971. Possibly extinct. Apparently specialized feeder on larvae of wood-boring beetles.

Associated Natural Communities: Palustrine:Cypress-tupelo Swamp, Cypress Swamp, Bottomland Forest.

Distribution: Historically known from bottomlands of Atlantic and Gulf coastal plains, from North Carolina to east Texas, north to southern Illinois and southeast Oklahoma: Also in Cuba. Current status and distribution in U.S. unknown; small number still present in Cuba. Listed as endangered by U.S. Fish and Wildlife Service.



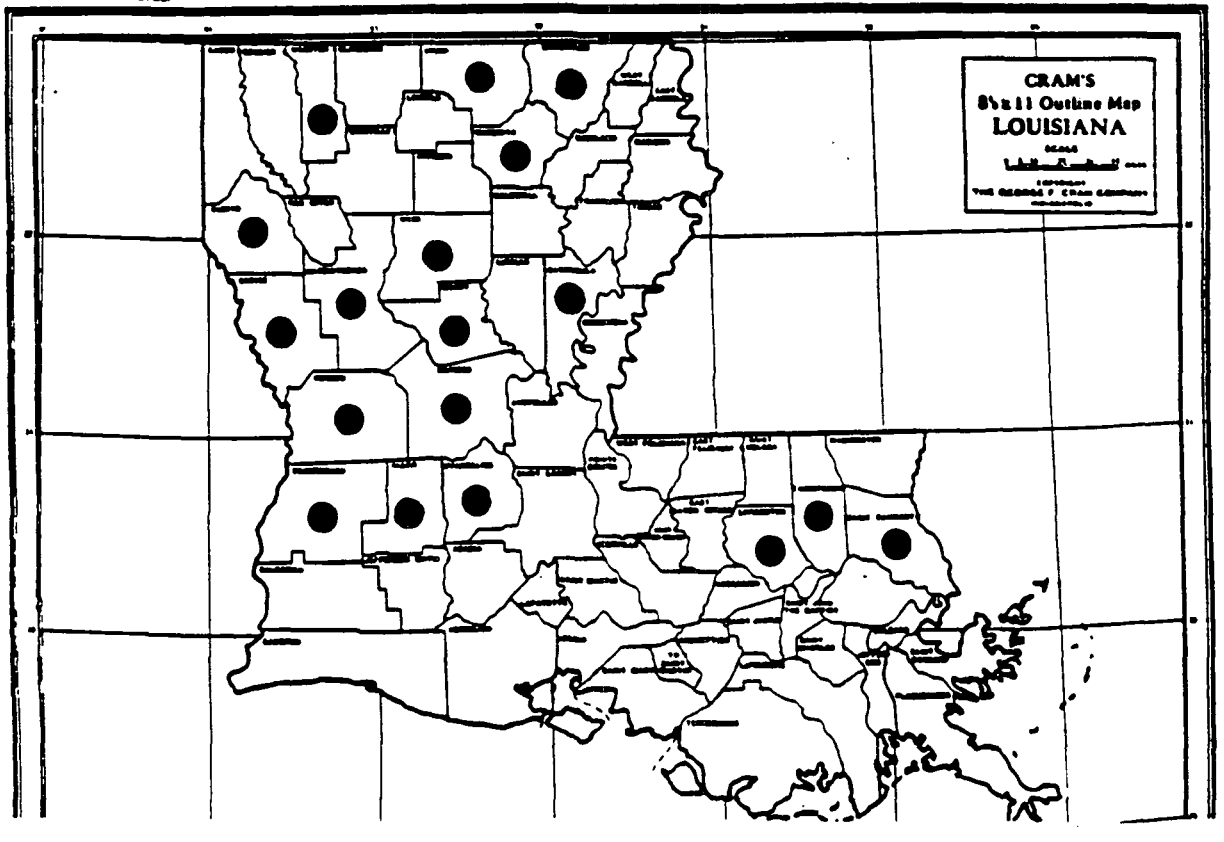
Picoides borealis
Red-cockaded Woodpecker
Rank=G2S2 (resident)

Description: Relatively small woodpecker. Back and wings black with prominent white bars. Crown, nape and back of neck black. Cheeks, side of neck and throat white. Black line from bill down to side of neck. White eyebrow line. Tail black with white on outer tail feathers. Underparts white with black streaks on flanks. Males with inconspicuous red marks on sides of crown ("cockades"). Immatures brownish and may have red on center of crown. Bill and legs black. Adults to 22 cm total length. No other black and white woodpecker found in the eastern U.S. has entirely white cheeks. Call is a loud, rough, strident "pick".

A cooperatively-breeding species typically found in clans that, in addition to the nesting pair, include 0-2 male offspring from previous nesting seasons. The set of cavity trees utilized by a clan is referred to as a colony. Red-cockaded Woodpeckers excavate cavities almost exclusively in live mature pines that have been infected with heartwood fungus (principally *Fomes pini*). Up to a year may be required to excavate a cavity, which is then used for many years. Resin wells are excavated around the entrance to the cavity to inhibit predation, especially by rat snakes (*Elaphe obsoleta*). Nesting occurs in the adult males' cavity; 2-5 eggs incubated 10-13 days. Restricted to tracts of mature longleaf (*Pinus palustris*), also loblolly (*P. taeda*) or slash (*P. elliottii*) pine forest that have been regularly burned (3-5 years) to reduce understory hardwood cover. Feeds on variety of insects gleaned from under bark scales; also consumes fruits of shrubs and vines.

Associated Natural Communities: Terrestrial: Pine Flatwoods.

Distribution: Widely distributed, but local, throughout the southeastern coastal plain from coastal Texas to Florida. Formerly found throughout the state in mature pine forest, there are probably fewer than 400 active colonies remaining in Louisiana, nearly all on 4 districts of Kisatchie National Forest. Listed as endangered by the U.S. Fish and Wildlife Service.



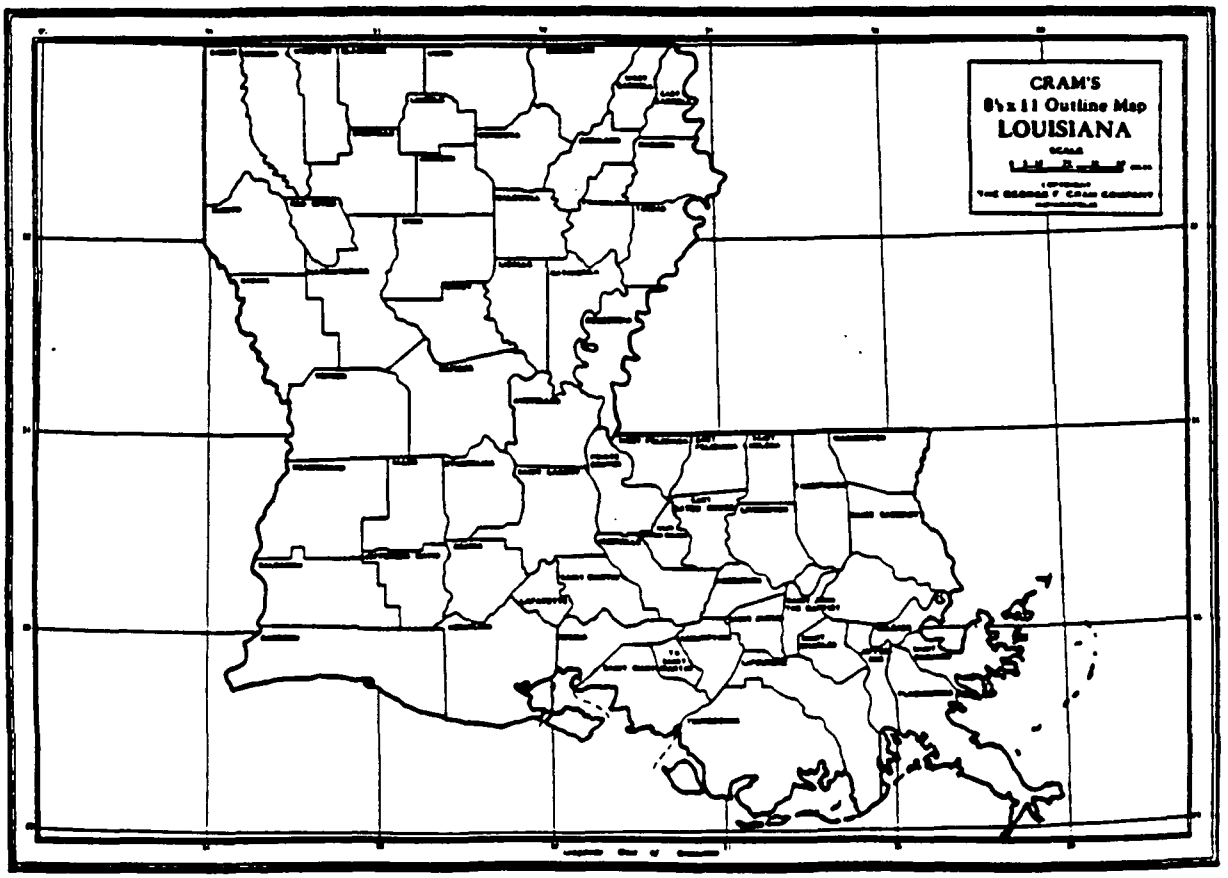
Vermivora bachmanii
Bachman's Warbler
Rank=GHSH

Description: Rear part of crown, nape and side of head gray; forehead, eye-ring, chin, belly and bend of wing bright yellow. Back and most of wings olive-green. Adult males are distinctive with upper breast, throat and forward part of crown black. Females lack distinct black throat and upper breast, but may exhibit diffused dusky streaks.

Little known about the life history of this bird--the rarest songbird in North America. Apparently preferred small openings within mature bottomland forest; canebrakes may have been important. Listed as endangered by U.S. Fish and Wildlife Service.

Associated Natural Communities: Palustrine: Bottomland Forest.

Distribution: Formerly nested in bottomlands of the Atlantic and Gulf coastal plains. Apparently wintered in Caribbean. Current status unknown but nearly extinct.



Trichechus manatus
West Indian Manatee
Rank=G2?SA

Description: Large, docile, barrel-shaped aquatic mammal. Head small, flattened in profile. Upper jaw extends beyond lower jaw and nostrils placed on top of snout. Stiff bristles around mouth. Lacks external ears. Front limbs modified into rounded flippers that are much more flexible than those of cetaceans. Hind limbs absent. Tail large, spatulate. Adults may reach 4 m and 1000 kg.

Generally restricted to rivers and estuaries although manatees may enter salt water when traveling from site to site. Found in waters with dense submerged aquatic beds or floating vegetation. Herbivorous; eats a variety of aquatic plants.

Associated Natural Communities: Marine: Shallow Water; Estuarine: Bay, Tidal Pass; Lacustrine: Marsh Lake; Riverine: Subtidal Open Channel, Lower Perennial Open Channel, Submerged/Floating Vascular Vegetation.

Distribution: Found along the northern Atlantic coast of South America, the Caribbean coast of South and Central America, and the Greater Antilles north to Florida. During warmer months individuals disperse from Florida as far west as Louisiana. An increase in sightings along the northern Gulf of Mexico coast reflects the increase in the size of the population along the southern Big Bend coast of Florida. There have been about 6 sightings since 1970 in Louisiana, the most recent were observations of a lone manatee in the Amite River, south of Denham Springs, Livingston Parish, during the summers of 1985 and 1986. Listed as endangered by the U.S. Fish and Wildlife Service.

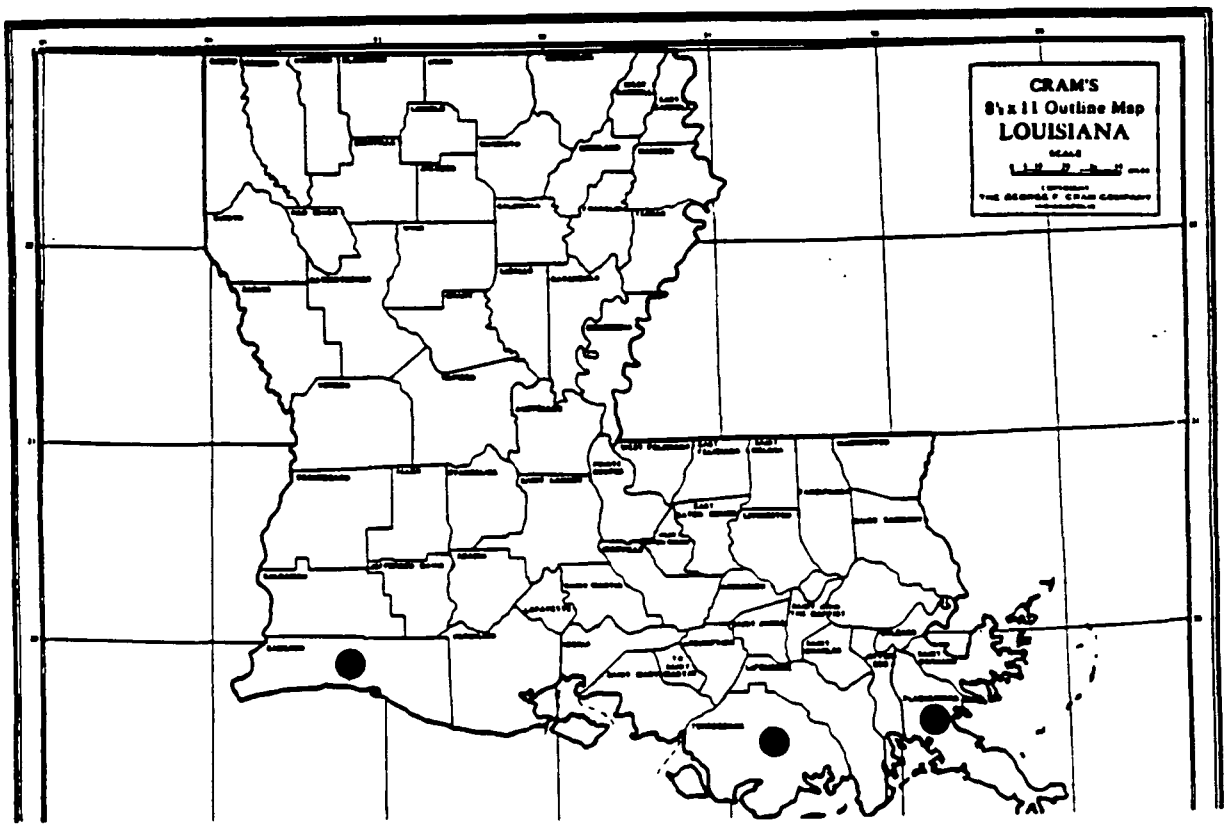
Balaenoptera physalus
Finback Whale
Rank=G2SN

Description: This species is second only to the blue whale in size and weight. Dark gray or brownish back; underside light to tail; sides unmarked. The color pattern of the head is similar to that of the body but rotated about 90 degrees to the left; right lower jaw, anterior right baleen plates, and right side of tongue white. Dark line from eye to middle of back, and a light line from the eye to flipper and from flipper onto side sometimes present. One ridge on top of head from blowholes to tip of snout. Ventral grooves extend to midpoint of body. Dorsal fin about 60 cm tall, angled steeply backward, located posterior to the midpoint of the body. Adults may reach 24 m in total length; females slightly larger than males. Most similar in appearance to the blue whale (see species account), but can be distinguished from that species on the basis of head and baleen color and dorsal fin size.

Normally travels in small groups of 6-15 individuals but congregations of 100 or more reported at favorite foraging areas. Generally inhabits waters between shore and the 1000-fathom curve. Matures at 6-7 years of age. Mates and calves November-March; females produce one calf every 2-3 years. Feeds on pelagic crustaceans and fish.

Associated Natural Communities: Marine: Deepwater.

Distribution: Found in all oceans and seas, including polar waters, during the summer. Present in the Gulf of Mexico throughout the year, which may indicate a somewhat isolated population. There are 4 stranding records from Louisiana, all from the southeast coast. Listed as endangered by the U.S. Fish and Wildlife Service.



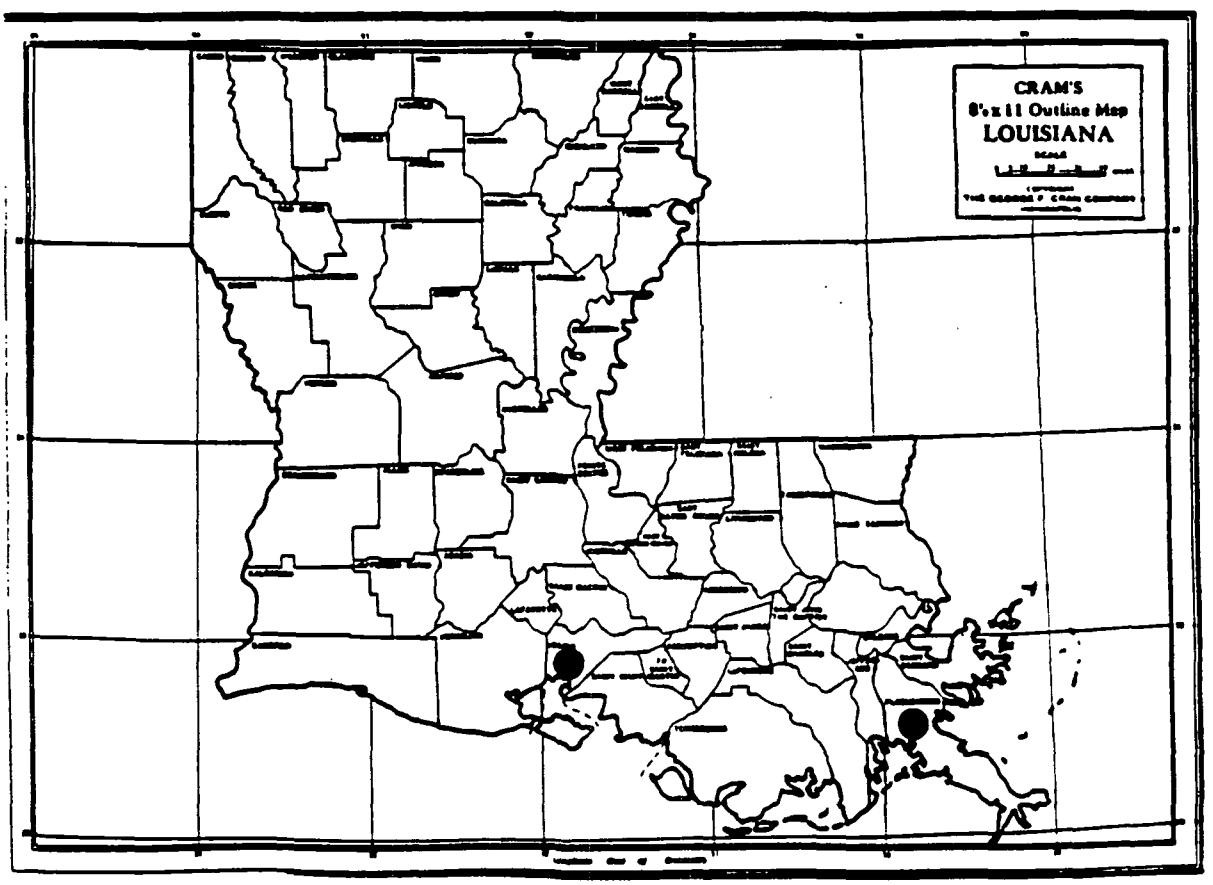
Balaenoptera borealis
Sei Whale
Rank=G2SN

Description: Large whale. Dark, steel gray in color with a lighter throat and chest and light mottling on the flanks and belly. Dorsal fin up to 60 cm tall, strongly hooked, located near the midpoint of the body. Ventral grooves only extend to midpoint between flippers and navel. Baleen composed of very fine bristles (about 0.1 mm in diameter at base, compared to 0.3 mm or greater for other Balaenopterids); shiny black. Single ridge on top of head. Similar in appearance to bryde's (tropical) and sei whales: the former has 3 ridges on the top of the head, the later has distinctive head and baleen color pattern. Adults reach 20 m total length.

Usually found in small family groups of 4 or 5 but occasionally form larger concentrations when feeding. Found in coastal and off-shore waters. Matures at 7-10 years of age; 1 calf produced every 2-3 years. Feeds near the surface on zooplankton and small fish.

Associated Natural Communities: Marine: Deepwater.

Distribution: Found throughout the oceans and seas of the world but tends to avoid polar waters. There are only 3 records from the Gulf of Mexico; 1 from Louisiana, near Fort Bayou, Plaquemines Parish, April 1956. Listed as endangered by the U.S. Fish and Wildlife Service.



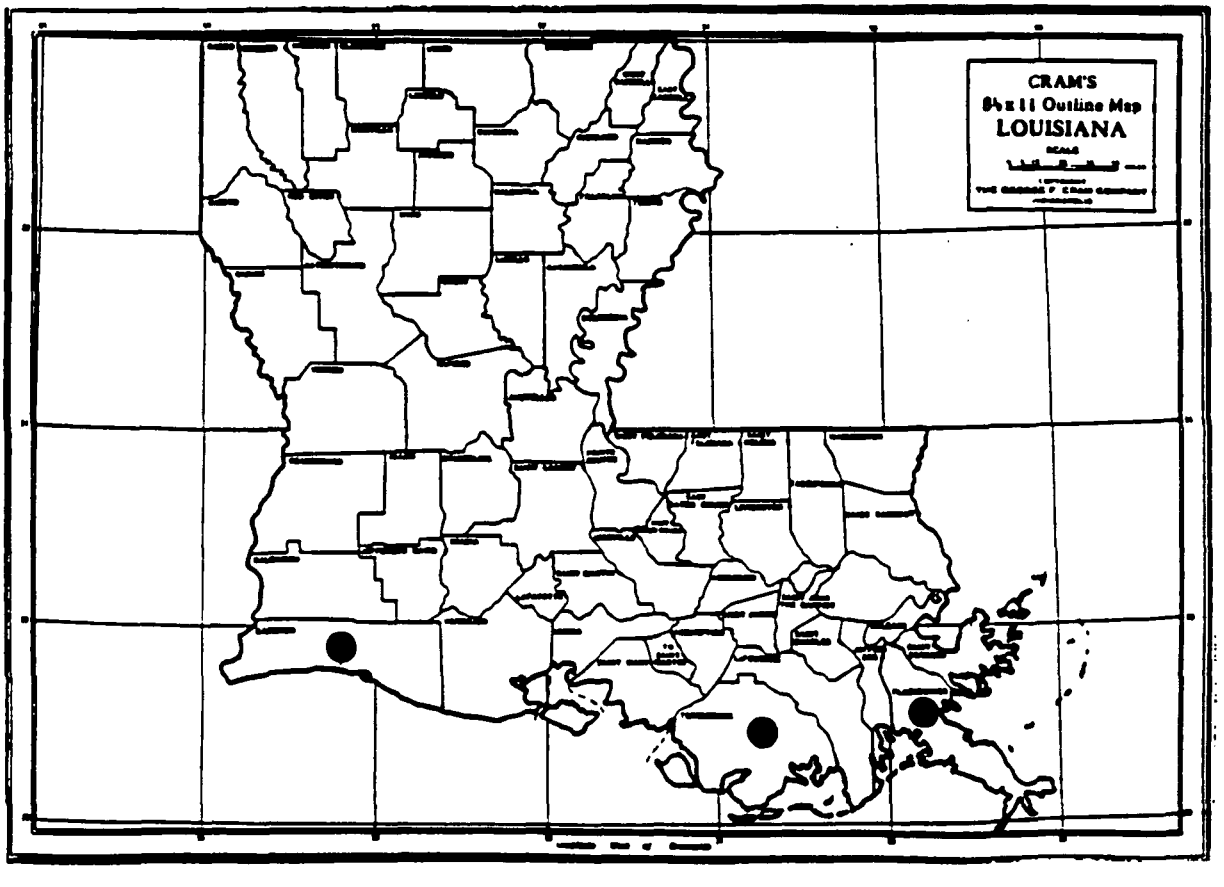
Physeter macrocephalus
Sperm Whale
Rank=G2SN

Description: The enormous head (25-30% of total length) is rectangular in profile; lower jaw small, narrow, shorter than snout. Dorsal fin replaced by a hump with several ridges on the posterior portion of the back. Flippers are relatively small but flukes are broad. Single blowhole on tip of snout, located left of midline. Overall body color steel-gray with some blotches on lower jaw, belly and sides. Twenty to 25 large conical teeth in each side of lower jaw. Adult males may reach 21 m total length although individuals larger than 15 m are rare; females rarely exceed 12 m.

Travels in herds of up to 30 mature females and nursing calves led by an adult male or in small groups of bachelor males; however groups of up to 1000 individuals have been reported. Males move into higher latitudes, often to the edge of polar ice, while females and young stay in warmer waters (between 40 degrees north and 40 degrees south latitude). One (rarely 2) calves born every 4 years. Eats mostly squid, especially deep-water species; also fish and crustaceans. May dive to depths in excess of 3000 m when feeding.

Associated Natural Communities: Marine: Deepwater.

Distribution: Found in oceans worldwide, generally beyond the continental shelf. Most sightings from the Gulf are from beyond the 1000 fathom line, although strandings have occurred throughout the Gulf coast. Individual strandings have been documented from Cameron, Terrebonne and Plaquemines parishes but there are numerous recent sightings off the mouth of the Mississippi River. Listed as endangered by the U.S. Fish and Wildlife Service.



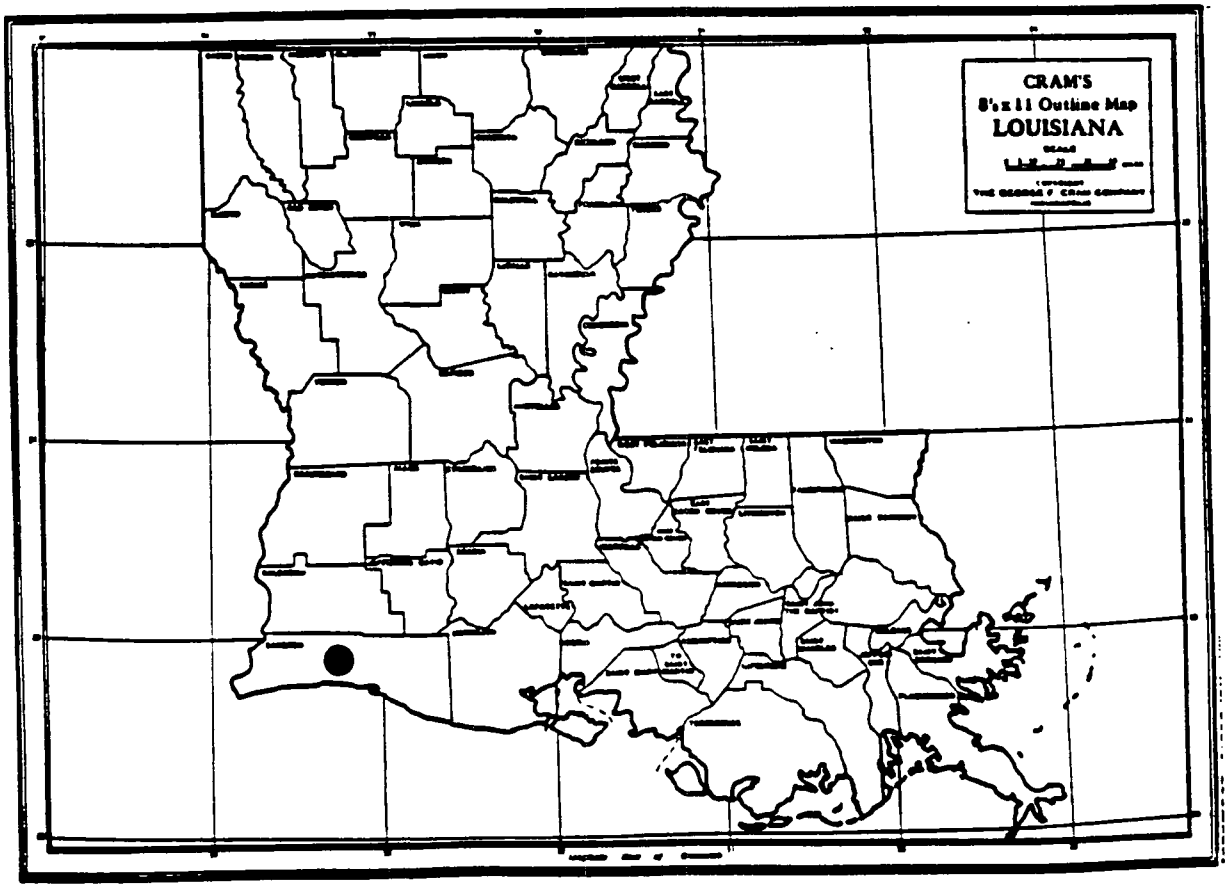
Balaenoptera musculus
Blue Whale
Rank=G2SN

Description: Very large (largest living mammal). Head broad, U-shaped. Body color is blue-gray throughout, mottled with light gray and white on the underside. Flipper tips and underside light gray. Dorsal fin small (less than 33 cm tall) positioned posterior to body midpoint (more so than other Balaenopterids). Throat grooves extend beyond navel. Baleen black. Average length about 25 m; maximum about 30 m.

Generally found singly or in small family groups of 3-4 individuals in open oceans. Feeds on a few species of zooplankton, especially krill (*Euphausia superba*); occasionally consumes fish.

Associated Natural Communities: Marine: Deepwater.

Distribution: Found in all oceans worldwide, but tends to avoid tropical waters. Northern and southern populations spend their respective winters in polar waters and summer in temperate or tropical waters. Only 2 records from the Gulf of Mexico, 1 of which was a stranded individual found near the mouth of Sabine Pass, Cameron Parish, Louisiana, December 1924. Listed as endangered by the U.S. Fish and Wildlife Service.



Felis concolor corvi
Florida panther (mountain lion)
Rank=G4T1SH

Description: Large, long-tailed cat. Body color dark tan with a rusty overtone, especially in the mid-dorsal region. Belly light; tail tipped with black. Pelage composed of short, stiff hairs. The combination of characters that separates this subspecies from all others are a right angle crook at the terminal end of the tail, a "cowlick" in the middle of the back and white flicking on the head, nape and shoulders. THERE ARE NO DOCUMENTED RECORDS OF BLACK MOUNTAIN LIONS IN NORTH AMERICA. Mature males may weigh up to 75 kg and measure more than 2 m from nose to tip of tail.

Generally solitary except during the breeding season (November through March) or females with young. May have extremely large home range: males to 500 sq. km, females to 400 sq. km). Require large tracts of undisturbed habitat. Deer are the principle prey of this large predator, although rabbits, rats, raccoons, armadillos and birds are also taken regularly. Last documented in Louisiana was on killed in Caddo Parish 1965. Listed as endangered by U.S. Fish and Wildlife Service.

Associated Natural Communities: Mountain lions occupy the broadest range of habitats of any mammal in the Western Hemisphere: mountains to deserts to bottomlands to tropical forest. Florida panthers utilized a large variety of plant communities in the southeastern U.S.

Distribution: Formerly found from southern Missouri, south to Louisiana and east to Florida and South Carolina. An estimated 20-50 animals remain, all in southern Florida. The identity and source of panthers reported in Louisiana are unknown.

Canis rufus
Red Wolf
Rank=GHSH

Description: A relatively large canid, about the size of a large domestic dog. Pelage color is highly variable, ranging from gray to brown to nearly black. Skull broader and muzzle shorter than coyote (Canis latrans). Minimum adult weights are 23 kg for males and 19 kg for females.

Little is known about the life history of red wolves --they were eliminated before any detailed studies were undertaken. They atypically traveled in family groups and apparently had a home range of up to 100 sq. km. Inbreeding with coyotes, which have moved into Louisiana with the conversion of forest to agriculture, and persecution by man led to the extinction of pure red wolves in the wild by the early 1970's. Fortunately, several genetically-pure red wolves were captured from the wild and served as the founder population for all red wolves existing today. Recent reintroduction efforts on Alligator Bayou NWR, South Carolina, have been promising. Red wolves are opportunistic foragers: rabbits, nutria, rats and small birds are often taken. Listed as Endangered by the U.S. Fish and Wildlife Service.

Associated Natural Communities: Estuarine: Salt Marsh, Brackish Marsh, Intermediate Marsh; Palustrine: Freshwater Marsh, Coastal Prairie: Bottomland Forest

Distribution: Formerly ranged from central Texas to Georgia, north to Missouri, Illinois and Indiana. Now considered extinct in the wild except for experimental reintroduction programs.

SPECIES LISTED AS THREATENED (T) ENDANGERED (E) IN LOUISIANA 1993

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS
PLANTS			
Earthfruit	Geocarpon minimum	T	*
Louisiana Quillwort	Isoetes louisianensis	E	*
INVERTEBRATES			
American Burying Beetle	Nicrophorus americanus	E	E
Inflated Heelsplitter	Potamilus inflatus	T	T
Louisiana Pearlshell	Margaritifera hembeli	E	E
FISH			
Pallid Sturgeon	Scaphirhynchus album	E	E
Gulf Sturgeon	Acipenser oxyrhynchus desotoi	T	T
REPTILES			
Green Sea Turtle	Chelonia mydas	T/E	T
Hawksbill Sea Turtle	Eretmochelys imbricata	E	E
Kemp's Ridley Sea Turtle	Lepidochelys kempii	E	E
Leatherback Sea Turtle	Dermochelys coriacea	E	E
Loggerhead Sea Turtle	Caretta caretta	T	T
Gopher Tortoise	Gopherus polyphemus	T	T
Ringed Sawback Turtle	Graptemys oculifera	T	T
BIRDS			
Brown Pelican	Pelicanus occidentalis	E	E
Bald Eagle	Haliaeetus leucocephalus	E	E
Peregrine Falcon	Falco peregrinus	T/E	T/E
Attwaters Greater Prairie Chicken**	Tympanuchus cupido attwateri	E	*
Whooping Crane**	Grus americana	E	E
Eskimo Curlew**	Numenius borealis	E	E
Piping Plover	Charadrius melodus	T/E	T/E
Interior Least Tern	Sterna antillarum athalassos	E	E
Ivory-billed Woodpecker**	Campephilus principalis	E	E
Red-cockaded Woodpecker	Picoides borealis	E	E
Bachman's Warbler	Vermivora bachmanii	E	E
MAMMALS			
West Indian Manatee	Trichechus manatus	E	E
Blue Whale	Balaenoptera musculus	E	E
Finback Whale	Balaenoptera physalus	E	E
Sei Whale	Balaenoptera borealis	E	E
Sperm Whale	Physeter catadon	E	E
Red Wolf**	Canis rufus	E	E
Black Bear	Ursus americanus luteolus	T	T
Florida Panther**	Felis concolor corvi	E	E

*Unlisted

**Extinct or nearly extinct in Louisiana

LOUISIANA NATURAL HERITAGE PROGRAM
SPECIAL ANIMALS (13 FEBRUARY 1990)

Scientific Name	Common Name	SRANK	GRANK
INVERTEBRATES			
Dubiraphia parva	little riffle beetle	S1S3	G1G3
Brachycercus flavus	yellow brachycercus mayfly	SH	GH
Chematopsyche morsei	caddisfly	S1	G?
Chimarra holzenthali	caddisfly	S1	G?
Hydroptila ouachita	micro-caddisfly	S1	G?
Leuctra szczytkoi	Schoolhouse Springs stonefly	S1	G1G3
Alasmidonta marginata	elktoe (mussel)	S?	G5
Ellipsaria lineolata	butterfly (mussel)	S?	G4
Elliptio crassidens	elephant-ear (mussel)	S2S3	G4
Elliptio dilatata	spike (mussel)	S?	G5
Fusconaia ebena	ebonyshell (mussel)	S1S3	G3
Lampsilis ornata	southern pocketbook (mussel)	S1?	G1?
Lasmigona complanata	white heelsplitter (mussel)	S?	G5
Ligumia recta	black sandshell (mussel)	S?	G5
Margaritifera hembeli	Louisiana pearlshell (mussel)	S1	G1
Obovaria jacksoniana	southern hickorynut (mussel)	S1S2	G1G2
Obovaria unicolor	Alabama hickorynut (mussel)	S1S3	G2G3
Pleurobema cordatum	Ohio pigtoe (mussel)	S?	G4
Potamilus capax	fat pocketbook (mussel)	S?	G1
Potamilus inflatus	inflated heelsplitter (mussel)	S1	G1
Potamilus laevissima	pink papershell (mussel)	S?	G5
Quadrula nodulata	wartyback (mussel)	S1S3	G3
Strophitus subvexus	southern creekmussel	S1	G1
Strophitus undulatus	squawfoot (mussel)	S?	G5
FISH			
Acipenser fulvescens	lake sturgeon	S1	G3
A.oxyrhynchus desotoi	gulf sturgeon	S1	G3TU
Scaphirhynchus albus	pallid sturgeon	S1	G1
Polyodon spathula	paddlefish	S3	G4
Alosa alabamae	Alabama shad	S2S3	G4
Campostoma anomalum	central stoneroller	S2	G5
Ericymba buccata	silverjaw minnow	S3S4	G5
Hybopsis gelida	sturgeon chub	SA	G3
Hybopsis gracilis	flathead chub	SA	G4
Hybopsis meeki	sicklefin chub	SA	G2
Notropis boops	bigeye shiner	S2	G
Notropis camurus	bluntface shiner	S3	G
Notropis hubbsi	bluehead shiner	S2	G
Notropis potteri	chub shiner	S3	G
Notropis sabinae	Sabine shiner	S4	G
Notropis signipinnis	flagfin shiner	SU	G5
Notropis welaka	bluenose shiner	S3	G
Notropis whipplei	steelcolor shiner	S2	G
Phenacobius mirabilis	suckermouth minnow	S3	G
Carpiodes cyprinus	quillback	S2	G
Carpiodes velifer	highfin carpsucker	S2S3	G3G
Cycleptus elongatus	blue sucker	S2	G
Moxostoma carinatum	river redhorse	S2	G
Noturus flavus	stonecat	SA	G
Noturus munitus	frecklebelly madtom	S3	G
Fundulus jenkinsi	saltmarsh topminnow	S2S3	G
Fundulus euryzonus	broadstripe topminnow	S2	G
Ammocrypta asprella	crystal darter	S3	G
Ammocrypta clara	western sand darter	S2	G
Etheostoma caeruleum	rainbow darter	S3	G
Percina lenticula	freckled darter	S2	G
Percina macrolepida	bigscale logperch	S1S2	G
Percina uranidea	stargazing darter	SA	G
Percina sp 8	(from LA)	S?	G
AMPHIBIANS			
Ambystoma tigrinum	eastern tiger salamander	S1	G5
Amphiuma means	two-toed amphiuma	S2	G5
Eurycea cirrigera	southern two-lined salamander	S3?	G?Q
Hemidactylium scutatum	four-toed salamander	S1	G5
Plethodon serratus	southern redback salamander	S1	G5
Plethodon websteri	Webster's salamander	S1	G3Q
Plethodon kisatchie	Louisiana slimy salamander	S1S2	G?
Pseudotriton montanus	gulf coast mud salamander	S1	G5
Pseudotriton ruber	southern red salamander	S1	G5
Pseudacris ornata	ornate chorus frog	SH	G5
Pseudacris streckeri	Strecker's chorus frog	S1	G5?
Rana areolata sevosa	dusky crawfish frog	S2	G5T2

Name	Common Name	SRANK	GRANK
REPTILES			
Caretta caretta	loggerhead	S1	G3
Chelonia mydas	green turtle	SN	G3
Eretmochelys imbricata	hawksbill	SN	G3?
Lepidochelys kempii	Kemp's ridley	S1	G1
Macroclemys temminckii	alligator snapping turtle	S3?	G3?
Dermochelys coriacea	leatherback	SN	G3
Graptemys geographica	map turtle	SU	G5
Graptemys oculifera	ringed map turtle	S2	G2
Graptemys pulchra	Alabama map turtle	S3	G4?
Malaclemys terrapin pileata	diamond back terrapin	S2	G5T2
Terrapene ornata	ornate box turtle	S2	G5
Kinosternon minor	stripeneck musk turtle	S1	G5
Gopherus polyphemus	gopher tortoise	S1	G2
Apalone muticus calvata	Gulf Coast smooth softshell	S3	G5T4?
Ophisaurus ventralis	eastern glass lizard	S3?	G5
Eumeces septentrionalis	southern prairie skink	S1	G5
Carphophis amoenus vermis	western worm snake	S3?	G5T5
Coluber constrictor *etheridgei*	tan racer	SU	G5T?
Farancia erytrogramma	rainbow snake	S2?	G5
Lampropeltis calligaster rhombomaculata	mole kingsnake	S3	G5T?
Pituophis melanoleucus	pine snake	S3	G5
P. m. lodingi	black pine snake	S1	G5T2
P. m. ruthveni	Louisiana pine snake	S3	G5T3
Rhadinaea flavilata	pine woods snake	S2	G4?
Micrurus fulvius fulvius	eastern coral snake	S3	G5T?
Crotalus adamanteus	*eastern diamondback rattlesnake*	S1	G5
BIRDS			
Pelecanus erythrorhynchos	American White Pelican	S3	G3
Pelecanus occidentalis	Brown Pelican	S1	G5
Egretta rufescens	Reddish Egret	S2	G4
Plegadis falcinellus	Glossy Ibis (nesting)	S2	G5
Ajaia ajaja	Roseate Spoonbill	S2	G5
Cygnus buccinator	Trumpeter Swan	SH	G4
Anas rubripes	American Black Duck	S3S4	G4
Pandion haliaetus	Osprey (nesting)	S2	G5

Scientific Name	Common Name	SRANK	GRANKSc
Elanoides forficatus	American Swallow-tailed Kite	S1	G5
Haliaeetus leucocephalus	Bald Eagle	S3	G3
Accipiter cooperii	Cooper's Hawk (nesting)	S1	G4
Buteo platypterus	Broad-winged Hawk (nesting)	S3	G5
Aquila chrysaetos	Golden Eagle	S1	G4
Polyborus plancus	Crested Caracara	S1	G5
Falco peregrinus	*Peregrine Falcon*	S2	G3
Laterallus jamaicensis	Black Rail	S2?	G3G4
Grus canadensis	Sandhill Crane	S1	G5
Grus americana	Whooping Crane	SH	G1
Charadrius alexandrinus	Snowy Plover	S2?	G4?
Charadrius melodus	Piping Plover	S2	G2
Haematopus palliatus	American Oystercatcher	S1	G5
Numenius borealis	Eskimo Curlew	SH	G1
Sterna nilotica	Gull-billed Tern (nesting)	S2	G5
Sterna caspia	Caspian Tern (nesting)	S3	G5
Sterna antillarum	Least Tern	S2	G4
S. a. athalassos	Interior Least Tern	S1	G4T2
Sterna fuscata	Sooty Tern (nesting)	S1	G5
Columbina passerina	Common Ground-dove (nesting)	S2	G5
Asio flammeus	Short-eared Owl	S1	G5
Picoides borealis	Red-cockaded Woodpecker	S2	G2
Campephilus principalis	Ivory-billed Woodpecker	SH	G1
Empidonax traillii	Willow Flycatcher (nesting)	S1	G5
Eremophila alpestris	Horned Lark (nesting)	S2S3	G5
Sitta carolinensis	White-breasted Nuthatch	S3	G5
Vireo bellii	Bell's Vireo (nesting)	S1	G5
Vireo gilvus	Warbling Vireo (nesting)	S1	G5
Vermivora bachmanii	Bachman's Warbler	SH	GH
Dendroica petechia	*Yellow Warbler (nesting)*	SU	G5
Helmitheros vermivorus	Worm-eating Warbler (nesting)	S1	G5
Seiurus motacilla	Louisiana Waterthrush (nesting)	S2S3	G5
Aimophila aestivalis	Bachman's Sparrow (nesting)	S3?	G3
Ammodramus savannarum	Grasshopper Sparrow	S3?	G4
Ammodramus henslowii	Henslow's Sparrow	S3	G4
Sturnella neglecta	Western Meadowlark (nesting)	S?	G5

Name	Common Name	SRANK	GRANKScientific
MAMMALS			
Sorex longirostris	southeastern shrew	S2?	G5
Lasionycteris noctivagans	silver-haired bat	S1	G5
Eptesicus fuscus	big brown bat	S2?	G5Q
Marmota monax	woodchuck	SA	G5
Perognathus hispidus	hispid pocket mouse	S2	G5
Reithrodontomys humulis	eastern harvest mouse	S3S4	G5
Mesoplodon densirostris	Blainville's beaked whale	SN	G?
Ziphius cavirostris	goose-beaked whale	SN	G?
Physeter macrocephalus	sperm whale	SN	G2
Kogia simus	dwarf sperm whale	SN	G?
Stenella plagiodon	Atlantic spotted dolphin	S3S4	G?
Stenella clymene	short-snouted spinner dolphin	SN	G?
Stenella coeruleoalba	striped dolphin	SN	G?
Delphinus delphis	saddle-backed dolphin	S3?	G?
Pseudorca crassidens	false killer whale	SN	G?
Globicephala macrorhynchus	short-finned pilot whale	SN	G?
Balaenoptera physalus	finback whale	SN	G2
Balaenoptera borealis	sei whale	SN	G2
Balaenoptera acutorostrata	little piked or minke whale	SN	G5
Balaenoptera musculus	blue whale	SN	G2
Balaenoptera edeni	Bride's whale	SN	G?
Canis rufus	red wolf	SH	GH
Ursus americanus	black bear	S2	G5
Bassariscus astutus	ringtail	S?	G5
Mustela frenata	long-tailed weasel	S2	G5
Spilogale putorius	eastern spotted skunk	S2	G5
Felis concolor coryi	Florida panther	SH	G4T1
Trichechus manatus	manatee	SA	G2?

ELEMENT RANKING

Each element is assigned a single global rank; in addition, it receives a state rank for each state in which it occurs. State ranks within each state are assigned by the state Heritage program, and the rank for any particular element may vary considerably from state to state. Global ranking is done under the guidance of the national Science Department of The Nature Conservancy.

GLOBAL ELEMENT RANKS:

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GH = Of historical occurrence throughout its range, i.e., formerly part of the established biota, with the expectation that it may be rediscovered (e.g., Bachman's Warbler).

GU = Possibly in peril range-wide but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty, or use a range (e.g., G2G3) to delineate the limits (range) of uncertainty.

GX = Believed to be extinct throughout range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered.

STATE ELEMENT RANKS:

S1 = Critically imperiled in state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation from the state.

S2 = Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3 = Rare or uncommon in state (on the order of 21 to 100 occurrences).

S4 = Apparently secure in state, with many occurrences.

S5 = Demonstrably secure in state and essentially ineradicable under present conditions.

SA = Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded.

SH = Of historical occurrence in the state but no recent records; may still exist. Upon verification of an extant occurrence, SH-ranked elements would typically receive an S1 rank. The SH rank is reserved for elements for which some effort has been made to relocate occurrences, rather than simply ranking all elements not known from verified extant occurrences with this rank.

SU = Possibly in peril in state but status uncertain; need more information. NOTE: This rank is used infrequently, if the status of a species in the state is questionable a range of ranks (e.g., S1S3) is used or a question mark is added to the rank considered most appropriate (e.g., S1?).

SX = Apparently extirpated from state.

Explanation of standardized element ranking procedure employed by Heritage Programs nationwide.

Each element is assigned a single global rank; in addition, it receives a state rank for each state in which it occurs. State ranks within each state are assigned by the state Heritage program, and the rank for any particular element may vary considerably from state to state. Global ranking is done under the guidance of the national Science Department of the Nature Conservancy.

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Q = Uncertain taxonomic status ? = Indicates uncertainty about rank

STATE ELEMENT RANKS:

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SH = Of historical occurrence in the state but no recent records; may still exist. Upon verification of an extant occurrence, SH-ranked elements would typically receive an S1 rank. The SH rank is reserved for elements for which some effort has been made to relocate occurrences, rather than simply ranking all elements not known from verified extant occurrences with this rank.

SN = Regularly occurring, usually migratory and typically nonbreeding species for which no significant or effective habitat conservation measures can be taken in the state.

SU = Possibly in peril in state but status uncertain; need more information. NOTE: This rank is used infrequently, if the status of a species in the state is questionable a range of ranks (e.g., S1S3) is used or a question mark is added to the rank considered most appropriate (e.g., S1?).

SX = Apparently extirpated from state.

FEDERAL RANKS:

E = designated as endangered T = designated as threatened

C1 = Category 1 - substantial biological information on file to support the appropriateness of proposing to list as endangered or threatened. An '*' indicates taxa that may be extinct.

C2 = Category 2 - current information indicates that proposing to list is possible, but that substantial biological information is not on file to support such action.

SCIENTIFIC NAME	COMMON NAME	STATE RANK	GLOBAL RANK	FEDERAL STATUS
Actaea pachypoda	white baneberry	S2	G5	
Agalinis aphylla	coastal plain false-foxglove	S1	G3G4	
Agalinis caddoensis	Caddo Parish false-foxglove	SH	GHQ	C1*
Agalinis filicaulis	purple false-foxglove	S1	G3G4	
Agalinis linifolia	flax-leaf false-foxglove	S1	G3G4	
Amaranthus greggii	Gregg's amaranth	S2	G4?	
Amsonia ludoviciana	Louisiana blue star	S3	G3	3C
Anemone virginiana	Virginia anemone	S1	G5	
Antennaria solitaria	single-head pussytoes	S2	G5	
Arabis canadensis	sicklepod	SH	G5	
Asarum canadense	Canada wild-ginger	S1	G5	
Asclepias hirtella	green milkweed	S1	G5	
Asclepias humistrata	pine-woods milkweed	S1	G4G5	
Asclepias incarnata	swamp milkweed	S2	G5	
Asclepias michauxii	Michaux milkweed	S2	G4G5	
Asplenium resiliens	black-stem spleenwort	SX	G5	
Asplenium trichomanes	maidenhair spleenwort	SX	G5	
Aster solidagineus	narrowleaf aster	S2	G5	
Aster drummondii ssp. texanus	Texas aster	S1?	G5Q1?	
Astragalus crassicarpus var trichocalyx	ground-plum	S1	G5T5?	
Astragalus nuttallianus	a milk-vetch	S2S3	G5	
Astragalus soxmanlorum	Soxman milk-vetch	S2	G3	
Athyrium pycnocarpon	glade fern	S2	G5	
Athyrium thelypteroides	silvery glade fern	S2	G5	
Bartonia verna	white screwstem	S2	G5?	
Blechnum occidentale	sink-hole fern	S1	G5	
Botrychium alabamense	Alabama grape-fern	S1	G3	
Bouteloua curtipendula	side-oats grama	S1	G5	
Burmannia biflora	northern burmannia	S2	G4G5	
Callirhoe alcaoides	clustered poppy-mallow	S1	G5	
Calopogon barbatus	bearded grass-pink	S1	G5?	
Calopogon pallidus	pale grass-pink	S2	G4G5	
Camassia scilloides	wild hyacinth	S2	G4G5	
Campanulastrum americanum	tall bellflower	S1	G5	
Carex microdonta	a sedge	S1?	G3	
Carex physorhyncha	Bellow's-beak sedge	SU	G5	
Carya pallida	sand hickory	S1S2	G5	
Ceanothus herbaceus	prairie redroot	S1	G5	
Celastrus scandens	climbing bittersweet	S2	G5	
Cenchrus myosuroides	big sandbur	S1?	G4	
Cenchrus tribuloides	dune sandbur	S1	G5	
Ceratopteris pteridoides	floating antler-fern	S2	G5?	
Chamaelirium luteum	fairy wand	S2	G5	
Chamaesyce bombensis	sand dune spurge	S1	G4G5	
Chasmanthium laxum x ornithorhynchum		S1	HYB	
Chasmanthium ornithorhynchum	bird-bill spikegrass	S2	G4	
Cheilanthes alabamensis	Alabama lipfern	SX	G5	
Cheilanthes lanosa	hairy lipfern	S1	G5	
Chrysobalanus oblongifolius	gopher-apple	SH	G4G5	
Chrysopsis hyssopifolia	a golden aster	S1	G3G5	
Circaea lutetiana ssp canadensis	intermediate enchanter's nightshade	S2S3	G5T5	
Cirsium engelmannii	Cirsium terraenigrae	S1?	G4	
Cirsium muticum	swamp thistle	S1	G5	
Cleistes divaricata	spreading pogonia	S1	G4	
Clematis glaucophylla	white-leaved leather-flower	S1	G3?	
Cliftonia monophylla	buckwheat-tree	S1	G4G5	
Coelorachis tessellata	lattion joint grass	S2S3	G5?	
Cooperia drummondii	evening rainlily	S2?	G5	
Corallorhiza odontorhiza	autumn coral-root	S1	G5	
Coreopsis intermedia	golden wave tickseed	S1	G2G3	C2
Coreopsis nudata	Georgia tickseed	S1	G3?	
Coreopsis palmata	stiff tickseed	S1	G5	
Corylus americana	American hazelnut	S1	G5	
Crataegus triflora	three-flowered hawthorn	S1	G?	
Croomia pauciflora	croomia	SH	G4	3C
Croton argyranthemus	silver croton	S2	G5	
Ctenitis submarginalis	hairy comb fern	S1	G4G5	
Cymodocea filiformis	manatee-grass	S2	G4	
Cyperus cephalanthus		S1?	G?	C2
Cyperus cuspidatus	coastal-plain flatsedge	S1?	G4G5	
Cyperus distinctus	marshland flatsedge	S1?	G4	
Cyperus grayioides	an umbrella-sedge	S1	G3G4	3C
Cyperus louisianensis	Louisiana flatsedge	S1	G1?	C2
Cypripedium kentuckiense	southern lady's-slipper	S1	G3	C2
Dalea emarginata	wedge-leaf prairie-clover	S2	G4G5	
Dalea phleoides	slim-spike prairie-clover	S1	G4	
Dalea villosa var grisea	Petalostemon griseum	S2	G5T3T4	
Diplazium lonchophyllum	lance-leaved glade fern	S1	G1	
Dirca palustris	eastern leatherwood	S1	G4	
Dodecatheon meadia	common shooting-star	S2	G5	
Draba cuneifolia	wedge-leaf whitlow-grass	S1?	G5	
Drosera intermedia	spoon-leaved sundew	S1	G5	
Dryopteris x australis		S1	HYB	
Dryopteris celsa	log fern	S1	G4	
Dryopteris ludoviciana	southern shield wood-fern	S1	G4	
Echinacea purpurea	purple coneflower	S1	G4G5	

SCIENTIFIC NAME	COMMON NAME	STATE RANK	GLOBAL RANK	FEDERAL STATUS
Echinochloa polystachya	river grass	S1?	G5	
Echinodorus parvulus	dwarf burhead	SH	G2G3Q	
Eleocharis elongata	slim spike-rush	S1?	G5?	
Eleocharis fallax	creeping spike-rush	S1?	G4G5	
Eleocharis radicans	rooted spike-rush	S1	G5	
Eleocharis tricostata	three-angle spikerush	S1?	G3	
Eleocharis wolfii	wolf spikerush	S1?	G4G5	C2
Eragrostis curtipedicellata	gummy lovegrass	S1	G5	
Erianthus brevibarbis	short-beard plumegrass	S1?	G3G5	
Eriochloa punctata	punctate cupgrass	S2	G5	
Eriogonum longifolium	long-leaved wild-buckwheat	S2	G4	
Eriogonum multiflorum	many-flowered wild-buckwheat	S2	G5	
Erythrodes querceticola	low erythrodes	S1	G3G5	
Erythronium albidum	white trout-lily	S1	G5	
Eulophia ecristata	a wild coco	S2	G3G4	C2
Euonymus atropurpureus	wahoo	S1	G5	
Eupatorium purpureum	thoroughwort	S1	G5	
Forestiera ligustrina	upland swamp privet	S2	G4G5	
Frasera caroliniensis	Carolina gentian	SH	G5	
Fuirena scirpoidea	southern umbrella-sedge	S1?	G5	
Fuirena simplex	western umbrella-grass	S1?	G5	
Galium virgatum	southwest bedstraw	S1	G5	
Geocarpon minimum	earth-fruit	S1	G2	T
Geranium maculatum	wild crane's-bill	S1	G5	
Glyceria septentrionalis	eastern manna-grass	S1	G5	
Glyceria striata	fowl manna-grass	S1	G5	
Habenaria quinqueseta	long-horned Habenaria	S1	G4G5	
Halophila engelmannii	Gulf halophila	S1	G3G5	
Hedyotis purpurea var calycosa	purple bluet	S1S2	G5T5	
Helenium brevifolium	shortleaf sneezeweed	S1	G4	
Helenium campestre	old field sneezeweed	S1	G4	
Heliotropium tenellum	slender heliotrope	S2	G5	
Herbertia lahue ssp caerulea	herbertia	S1?	G3G5T2	
Heuchera americana	American alumroot	S1	G5	
Hexalectris spicata	crested coral-root	S1S2	G4	
Ilex amelanchier	sarvis holly	S2	G3G4	3C
Ilex myrtifolia	myrtle holly	S2S3	G5?	
Indigofera miniata var leptosepala	scarlet pea	S1	G5T4	
Isoetes louisianensis	Louisiana quillwort	S1	G1	FJE
Isotria verticillata	large whorled pogonia	S2S3	G5	
Justicia americana	common water-willow	S1?	G5	
Kalmia latifolia	mountain laurel	S3	G5	
Koeleria cristata	june grass	S1	G5	
Lachnanthes caroliniana	Carolina redroot	S2S3	G4	
Lachnocaulon digynum	pineland bog button	S2	G3	C2
Liatris tenuis	slender gay-feather	S1	G2G3	C2
Lilium catesbaei	southern red lily	S1	G4	
Lindera melissifolia	pondberry	SH	G2	E
Lindera subcoriacea	bog spicebush	S1	G2	C2
Lithospermum incisum	narrow-leaved puccoon	S1?	G5	
Lobelia nuttallii	Nuttall's lobelia	S1	G4G5	
Lophiola aurea	golden crest	S2S3	G3G4	
Ludwigia microcarpa		S1	G3G4	
Lupinus villosus	ledy lupine	S1	G5	
Lycopodium cernuum	staghorn clubmoss	S2	G5	
Lyonia mariana	stagger-bush	S1	G5	
Macranthera flammea	flame flower	S1	G3	
Magnolia pyramidata	pyramid magnolia	S2	G4	
Matelea cynanchoides	prairie milkvine	S1	G4G5	
Mayaca aubletii	bog moss	S2	G3G5	
Medeola virginiana	Indian cucumber-root	S1	G5	
Melanthera nivea	snow melanthera	S2	G5	
Mimulus ringens	square-stemmed monkey-flower	S2?	G5	
Minuartia muriculata	Arenaria muriculata	S1	G4	
Mirabilis albida	pale *umbrella-wort*	S1S2	G5	
Monanthochloe littoralis	saltflat-grass	S1	G4G5	
Monarda lindheimeri	Lindheimer's bee-balm	S1	G3	
Monotropa hypopithys	American pinesap	S2	G5	
Muhlenbergia capillaris var filipes	sand-dune muhly	S1	G5T?	
Myrica inodora	odorless bayberry	S1S2	G4	
Nymphaea elegans	blue water lily	S1S2	G3G5	
Oenothera rhombipetala	evening primrose	S1?	G4G5	
Oenothera sessilis	evening primrose	S1?	G2Q	C2
Ophioglossum ellipticum	least adder's-tongue fern	S1	G?Q	
Orobanche uniflora	Broomrape	S1	G5	
Pachysandra procumbens	Allegheny-spurge	S2	G4G5	
Palafoxia texana var ambigua	Texas palafoxia	S1	G3G5T?	
Panax quinquefolius	American ginseng	S1	G4	3C
Panicum chamaelonche	panic grass	S1?	G?	
Panicum clandestinum	deer-tongue witchgrass	S1?	G5?	
Panicum filipes	panic grass	S1?	G?	
Panicum flexile	wiry witchgrass	S1	G3G5	
Panicum rigidulum var combsii	panic grass	S1?	G5T?	
Panicum strigosum	rough-hair witchgrass	SU	G5	
Panicum tenerum	southeastern panic grass	S1?	G4	
Paronychia drummondii	Drummond nailwort	S1	G3G4	
Pellaea atropurpurea	purple-stem cliff-brake	SX	G5	
Penstemon murrayanus	cupleaf beardtongue	S1	G4	
Petalostemum pinnatum	summer-farewell	S1	G5	
Phacelia strictiflora	phacelia	S1	G5	
Physalis carpenteri	Carpenter's ground-cherry	S1	G?	
Physostegia correllii	Correll's false dragon-head	S1	G2	C2
Physostegia longisepala	long-sepaled false dragon-head	S2	G2G3	C2

SCIENTIFIC NAME	COMMON NAME	STATE RANK	GLOBAL RANK	FEDERAL STATUS
Pinguicula lutea	yellow butterwort	S2	G4G5	
Platanthera blephariglottis	white-fringe orchis	S1	G4G5	
Platanthera integra	yellow fringeless orchid	S2	G3G4	3C
Platanthera lacera	green-fringe orchis	S1	G5	
Poa sylvestris	woodland bluegrass	S1?	G5	
Podostemum ceratophyllum	riverweed	S1	G5	
Polanisia erosa	large clammy-weed	S2	G5	
Polygala hookeri	Polygala	S1	G3	
Polygonella americana	southern jointweed	S1	G5	
Polygonella polygama	jointweed	S1	G4	
Ponthieva racemosa	shadow-witch orchid	S2	G4G5	
Potamogeton epihydrus	Nuttall pondweed	S1?	G5	
Potamogeton perfoliatus	clasping-leaf pondweed	S1	G5	
Prenanthes barbata	barbed rattlesnake-root	S1	G2G3	C2
Prunus gracilis	Oklahoma plum	S2	G4	
Psilocarya nitens	short-beaked bald-rush	S1?	G3	
Psilocarya scirpoides	long-beaked baldrush	SU	G4	
Psoralea digitata	palm-leaf scarf-pea	S1	G5	
Psoralea rhombifolia	roundleaf scarf-pea	S2S3	G5	
Psoralea subulata	awl-shaped scarf-pea	S1	G3G4	
Pterocaulon virgatum	wand blackroot	S1	G3G5	
Quercus arkansana	Arkansas oak	S2	G3	3C
Quercus durandii	Durand's white oak	S1	G5	
Quercus imbricaria	shingle oak	S1	G5	
Quercus laevis	turkey oak	S1	G5	
Quercus macrocarpa	burr oak	S1	G5	
Quercus oglethorpensis	Oglethorpe's oak	S1	G2	3C
Quercus sinuata	bastard oak	S1	G5	
Ranunculus flabellaris	yellow water-crowfoot	S1	G5	
Ratibida pedunculariа	Mexican hat	S2S3	G4G5	
Rhamnus lanceolata	lance-leaved buckthorn	S1	G4G5	
Rhynchospora baldwinii	Baldwin's beakrush	SU	G4	
Rhynchospora capitellata	beak-rush	S1?	G5	
Rhynchospora chapmanii	Chapman beakrush	S1	G4	
Rhynchospora ciliaris	ciliate beakrush	S1?	G4	
Rhynchospora compressa	flat-fruit beakrush	S2	G4	
Rhynchospora debilis	savannah beakrush	S1?	G4?	
Rhynchospora divergens	beak-rush	S1	G4	
Rhynchospora macra	beak-rush	S1	G3G4	
Rhynchospora miliacea	millet beakrush	S1?	G5	
Rhynchospora stenophylla	narrow-leaved beakrush	SH	G2	C2
Rhynchospora tracyi	beak-rush	SH	G4	
Ribes curvatum	granite gooseberry	S2	G4	
Rudbeckia missouriensis	Missouri coneflower	S2S3	G4G5	
Rudbeckia scabrifolia	Sabine coneflower	S2	G2	C2
Rudbeckia triloba	three-lobed coneflower	S1	G4	
Ruellia noctiflora	night-flowering wild-petunia	S1	G3?	
Sabatia arenicola	sand rose-gentian	S1	G3G5	
Sabatia macrophylla	large-leaved rose gentian	S2S3	G4G5	
Salix caroliniana	coastal plain willow	S1	G5	
Salix humilis	dwarf gray willow	S2	G5	
Samolus ebracteatus	brookweed	S1	G4G5	
Sanguinaria canadensis	bloodroot	S2	G5	
Sanicula marilandica	Maryland's black snake-root	S2?	G5	
Sarracenia psittacina	parrot pitcherplant	S3	G4	3C
Sarracenia purpurea	pitcher plant	SH	G5	
Saxifraga virginiensis	Virginia saxifrage	S1	G5	
Scaevola plumieri	scaevola	S1	G5	
Schizachyrium maritimum	gulf bluestem	S1	G3G4Q	
Schoenolirion wrightii	Texas sunnybell	S1	G3	C2
Scleria lithosperma	nut-rush	SU	G5	
Scleria verticillata		S1	G4?	
Scutellaria cardiophylla	heart-leaved skullcap	S2	G3G4	
Scutellaria thieretii	Thieret's skullcap	S2?	G2Q	C2
Selaginella arenicola ssp riddellii	Riddell's spike moss	S2	G5T4	
Selaginella ludoviciana	Louisiana spikemoss	S1	G4	
Serenoa repens	saw palmetto	S1	G4G5	
Sida elliottii	Elliott sida	S1	G4G5	
Silene stellata	starry campion	S1S2	G4?	
Silene subciliata	scarlet catchfly	S1	G2G3	C2
Silene virginica	fire pink	S1S2	G5	
Sium suave	hemlock water-parsnip	S2	G5	
Smilacina racemosa	false solomon's-seal	S1	G5	
Solanum dimidiatum	western horse-nettle	S1	G3G5	
Spartina pectinata	prairie cordgrass	S1	G5	
Spiranthes magnicamporum	Great Plains ladies'-tresses	S1	G5	
Sporobolus heterolepis	prairie dropseed	S1?	G5	
Sporobolus ozarkanus	Ozark dropseed	S1	G2?Q	C2
Sporobolus silveanus	silveus dropseed	SU	G3	
Streptanthus hyacinthoides	smooth twistflower	S2S3	G4G5	
Taenidia integerrima	yellow pimpernell	S2	G5	
Talinum parviflorum	small-flowered flame-flower	S1S2	G5	
Tetragonotheca ludoviciana	Louisiana square-head	S2	G3G4	
Thalassia testudina	turtle-grass	S2	G?	
Thalia dealbata	powdery thalia	S3?	G3G5	
Thelesperma filifolium	thread-leaved green-thread	S1	G4G5	
Thelypteris interrupta	Willdenow's fern	S1	G5?	
Thelypteris noveboracensis	New York fern	S1	G5	
Tidestromia lanuginosa	woolly honeysweet	S1	G5	
Tofieldia racemosa	coastal false-asphodel	S2S3	G5	
Tradescantia subaspera	broad-leaved spiderwort	S2	G5	
Trichomanes petersii	dwarf filmy-fern	S1	G3	
Tridens carolinianus	Carolina fluff grass	S2S3	G2G3	C2
Trillium recurvatum	reflexed trillium	S2	G5	
Trillium texanum	Texas trillium	S1	G2G3Q	C2

SCIENTIFIC NAME	COMMON NAME	STATE RANK	GLOBAL RANK	FEDERAL STATUS
Triosteum angustifolium	yellowleaf tinker's-weed	S2	G5	
Triosteum perfoliatum	perfoliate tinker's-weed	S1	G5	
Triphora trianthophora	nodding pogonia	S1	G4	
Triplasis americana	perennial sandgrass	S1	G5	
Uniola paniculata	sea oats	S2	G5	
Uvularia sessilifolia	sessile-leaved bellwort	S2	G5	
Veronicastrum virginicum	Culver's-root	SH	G5	
Viola pubescens var eriocarpa	downy yellow violet	S1	G5T5	
Xanthorhiza simplicissima	yellowroot	S1	G5	
Xyris drummondii	Drummond's yellow-eyed grass	S1	G3	C2
Xyris fimbriata	yellow-eyed grass	S1	G5	
Xyris scabrifolia	yellow-eyed grass	S1	G2G3	
Xyris stricta	yellow-eyed grass	S1	G3G4	
Zanthoxylum americanum	northern prickley ash	S1	G5	
Zigadenus densus	black snakeroot	S1	G5	
Zigadenus leimanthoides	death camus	S1	G4Q	
Zigadenus nuttallii	Nuttall death camas	S1	G5?	
Zornia bracteata	viperina	S2	G5?	

REFERENCE 23

RECORD OF COMMUNICATION

TYPE: Discussion **DATE:** 5-3-89 **TIME:** 3:30 p.m.

TO: Cathy LeBlanc
Baton Rouge Water Company
504-928-1000

FROM: Jeffrey E. Patterson
FIT Chemist
ICF Technology Incorporated
214-744-1641

SUBJECT: City of Baton Rouge Water Supply

SUMMARY OF COMMUNICATION:

Ms. LeBlanc provided information on the location, depth, and pumpage of all the wells in the system. In a discussion with her and another employee of the water works the following information was documented:

The service boundary for the Baton Rouge Water Company in the north is approximately Harding, Hooper, and Mickens Streets. In the west, the boundary is the Mississippi River. The Red Oak area (southwest of the 4 mile radius) has a private and separate water system. Southern University and the airport each have at least one well. Other water systems in the area include the Parish Water Company, the Bakers System, Alsen System, and the Port Allen System.

The Baton Rouge Water Company serves 84,000 connections both industrial and domestic, but primarily domestic. The current pumpage is approximately 50 million gallons per day.

They have a reservoir at Lula at North Thirty-first Street and one on Lafayette at North Boulevard.

The city has a fault line below it. Wells from north of this line provide water for the north and south side of the town.

The water works personnel know of no water supply intakes in the Mississippi.

Parish Water Company	504-261-0104
Red Oak Water Company	504-275-4074
Louisiana Water Company	504-926-4081
Brusly, Town of	504-749-3744
Capital Utilities Corp.	504-387-1870

REFERENCE 24

State of Louisiana

Department of Environmental Quality

Edwin W. Edwards
Governor

April 27, 1993

Kai David Midboe
Secretary

RECEIVED

MAY - 4 1993

PRC-BATON ROUGE

Mr. Cedric Cascio
PRC
9100 Bluebonnet Center Blvd., Suite 504
Baton Rouge, La. 70809

Dear Mr. Cascio:

This letter documents information provided to you by Max Forbes on April 8, 1993, concerning streamflows of Bayou Baton Rouge and Baker Canal at Scenic Highway (Highway 61) north of Baton Rouge. This information is in connection with work being done on the Petro Processors site by NPC.

From previous work on these streams, primarily stream measurements made in August of 1990, the following critical flows (paralleling the 7Q10) have been arrived at:

Bayou Baton Rouge at Scenic Highway - about 0.06 CFS or 0.04 MGD

Baker Canal at Scenic Highway - about 0.64 CFS or 0.42 MGD

These two discharges are considered to add together to produce a flow of about 0.70 CFS or 0.46 MGD downstream from the junction of Baker Canal and Bayou Baton Rouge.

If you have any questions, please contact Max Forbes at (504) 765-0551.

Sincerely,

Gary R. Aydell

Gary R. Aydell, Administrator
Water Pollution Control Division

GA:mjf:dps
c: Program Manager, Planning and Assessment Section
Program Manager, Industrial Permits, WPCD
Karen Bond, EPA (Hold for quarterly report)
Jack Ferguson, EPA
DEQ Capitol Area Regional Office
DEQ file LA0066214
Pam Broussard (FY92 604(b)/C6-220000-33, WE-4, 24400-93-25)
Supervisor, Engineering Section
Bruce Fielding, Industrial Permits

REFERENCE 25

MARTHA A. MADDEN
SECRETARY

OFFICE OF WATER RESOURCES

J. DALE GIVENS
ASSISTANT SECRETARY

June 19, 1987

To: J. Dale Givens

From: Michael H. Schurtz

Subject: Update on chemical contamination in Fishes, Devils Swamp Lake

Reference here is made to my memo of March 13, 1987 (copy attached) concerning preliminary results on PCB concentrations in fishes from Devils Swamp. Analytical results have been received from both the DHHR Laboratory and our Water Pollution Control Division laboratory as followup to these earlier preliminary results. These followup results include re-analysis of samples reported earlier (in March) as well as analysis of samples not previously analyzed. Attached is a tabulation of both the DHHR data and data for two samples analyzed by our lab using GC/MS.

These followup results indicate that data submitted in March (which reported PCB levels in edible fish tissue approaching or in excess of the U.S. FDA Action Level of 2.0 ppm) are suspect. These more recent confirmatory results indicate PCBs levels to be below 1.0 ppm in the range of 0.1 to 0.6 ppm, depending upon species and specimen size. However, these followup analyses additionally confirm the presence of hexachlorobenzene (HCB) and hexachloro-1,3-butadiene (HCBD). These chemicals were suspected earlier but were not found in the preliminary analyses reported in March.

My interpretation of these data is that the preliminary results on PCBs reported in March are not valid and should not be considered as representative of the fish tissue contamination. Therefore, my assessment is that at this time the PCB levels in fish from Devils Swamp, although of concern, do not represent a situation as potentially serious as the recent Capitol Lake situation where PCBs were documented at levels approximately an order of magnitude higher. However, these followup analyses indicate levels of HCB and HCBD that do exceed the "emergency guidelines" recently utilized by DHHR and DEQ in assessing the seafood contamination in certain areas of the Calcasieu estuary. The guidelines are 0.060 ppm for HCB and 0.060 ppm for HCBD, both applicable only to edible tissues.

NATURAL RESOURCES BUILDING • P.O. BOX 44091 • BATON ROUGE, LOUISIANA 70804-4091 • PHONE (504) 342-6363

I have been advised by Dr. Joyce Mathison, State Epidemiologist for DHHR, that she is preparing a recommendation for the issuance of a fishing and consumption advisory on Devils Swamp Lake. If DEQ is requested by DHHR to post advisory signs at access points to the lake, it will be necessary for our Legal Division to contact the landowners for permission to undertake such a posting since the Devils Swamp Lake is privately owned.

It is my opinion, based upon our 1985 and 1986 investigations in the Devils Swamp watershed, that the source of HCB and HCBD contamination is the "Petro Processors" site located on the northern end of Devils Swamp itself. Analyses of soil and sediment from drainage tributaries from other potential sources have not indicated contribution of HCB and HCBD.

MHS:pc

attachments

cc: Bobby Savoie, DHHR

TNKS 6/19/8

FISH TISSUE ANALYSES - DEVILS SWAMP LAKE

CONCENTRATIONS EXPRESSED AS PARTS PER MILLION (PPM)-MICROGRAMS/GRAM WET WEIGHT

SPECIES/SAMPLE #	WEIGHT (LBS)	STANDARD LENGTH (inches)	TOTAL LENGTH (inches)	TOTAL PCBs	PENTACHLOROBENZENE	HEXACHLOROBENZENE	HEXACHLORO-1,3-BUTAD
LARGEMOUTH BASS 176-860730-01A	3.75	14.75	16.75	0.379	0.024	0.073	0.224
LARGEMOUTH BASS 176-860730-02A	2.62	14.50	16.75	0.589	ND	0.028	0.032
LARGEMOUTH BASS 176-860730-03A	3.38	14.75	17.00	0.531	0.031	0.122	0.270
LARGEMOUTH BASS 176-860730-04A	2.62	13.50	15.50	0.298	0.019	0.086	0.158
LARGEMOUTH BASS 176-860730-05A	1.44	11.00	12.75	0.304	0.005	0.041	0.050
LARGEMOUTH BASS 176-860730-06A	2.06	13.00	15.25	0.398	ND	0.030	0.038
LARGEMOUTH BASS 176-860730-07A	1.00	10.00	11.75	0.290	ND	0.029	0.045
LARGEMOUTH BASS 176-860730-08A	0.69	9.00	10.50	0.200	ND	0.024	0.021
CHANNEL CATFISH 176-860730-12A	1.81	15.25	17.00	0.174	ND	0.035	0.014
BIGMOUTH BUFFALO 176-860730-13A	1.56	11.75	13.75	0.292	ND	0.006	0.028
SMALLMOUTH BUFFALO 176-860730-17A	0.56	7.75	9.00	0.117	ND	0.015	0.026
WHITE BASS 176-860730-19A	0.62	9.75	11.50	0.324	ND	0.019	0.011
WHITE CRAPPIE 176-860730-23A	0.69	8.50	10.00	0.300	ND	0.015	0.039
WHITE CRAPPIE 176-860730-29A	0.31	6.50	8.00	0.139	ND	0.010	0.013

DATA from LA DHHR - Gas Chromatography with Electron Capture Detection
ND = Not Detected
All chemical data are for edible portions

LARGEMOUTH BASS 176-860730-01A	3.75	14.75	16.75	0.201	0.016	0.034	0.065
LARGEMOUTH BASS 176-860730-03A	3.38	14.75	17.00	0.324	ND*	0.058	0.062

DATA from LA DEQ - Gas Chromatography/Mass Spectrometry
* Pentachlorobenzene not detected; 0.007 ppm of 1,4-dichlorobenzene and 0.003 ppm of tetrachlorobenzenes were determined
All chemical data are for edible portions

EXPANDED SITE INSPECTION
OF
DEVIL'S SWAMP
(LAD981155872)
EAST BATON ROUGE PARISH, LOUISIANA

FINAL REPORT

APPENDICES

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment	:	C06072
EPA Region	:	6
Site No.	:	LAD981155872
Date Prepared	:	October 20, 1993
Contract No.	:	68-W9-0006
PRC No.	:	009-C06072
Prepared by	:	PRC Environmental Management, Inc.
Telephone No.	:	(504) 295-3933
EPA Work Assignment Manager	:	John Jones
Telephone No.	:	(214) 655-6669

APPENDIX A

ESI PHOTO DOCUMENTATION

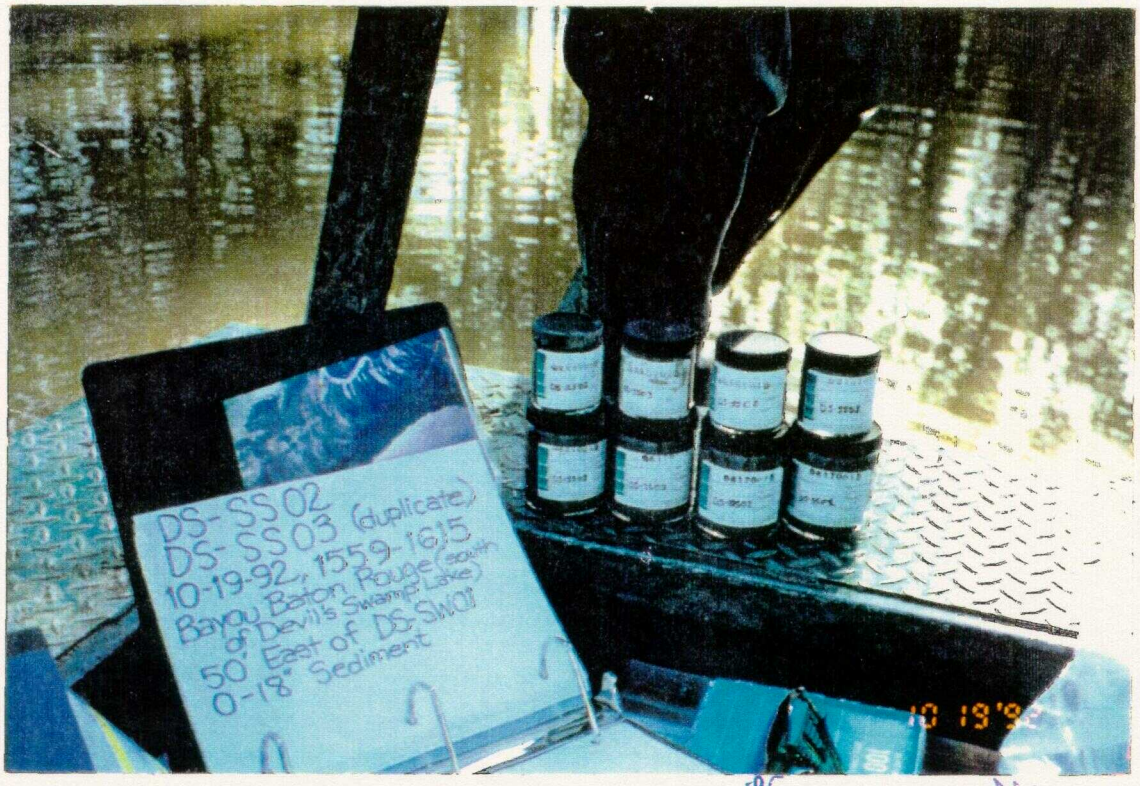
PHOTOGRAPH NO. 1

Date: 10/19/92 Time: 1450 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: South-southwest Reference in Logbook: Page 8

Picture Description: Sample DS-SS-01; located upstream from dead cypress tree

PHOTOGRAPH NO. 2



Date: 10/19/92 Time: 1615 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: West Reference in Logbook: Page 11

Picture Description: Samples DS-SS-02 and DS-SS-03 (duplicate)

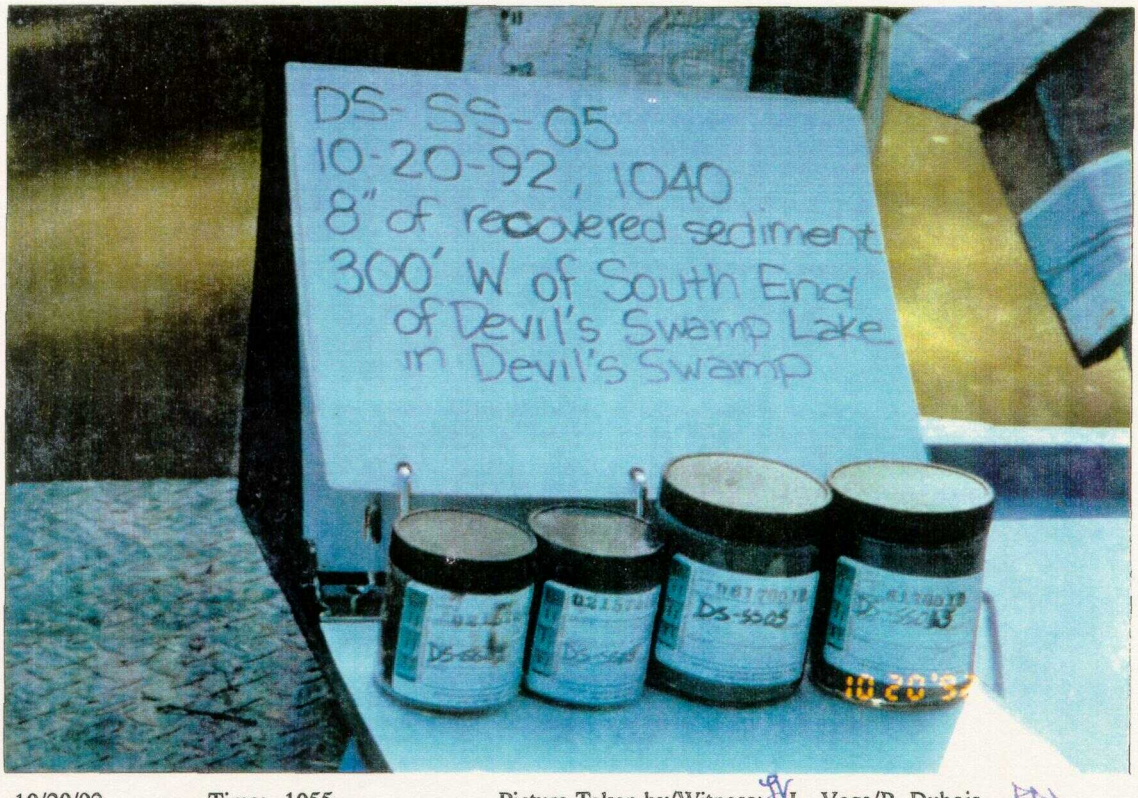
PHOTOGRAPH NO. 3

Date: 10/19/92 Time: 1652 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: Southeast Reference in Logbook: Page 11

Picture Description: Sample DS-SS-04

PHOTOGRAPH NO. 4

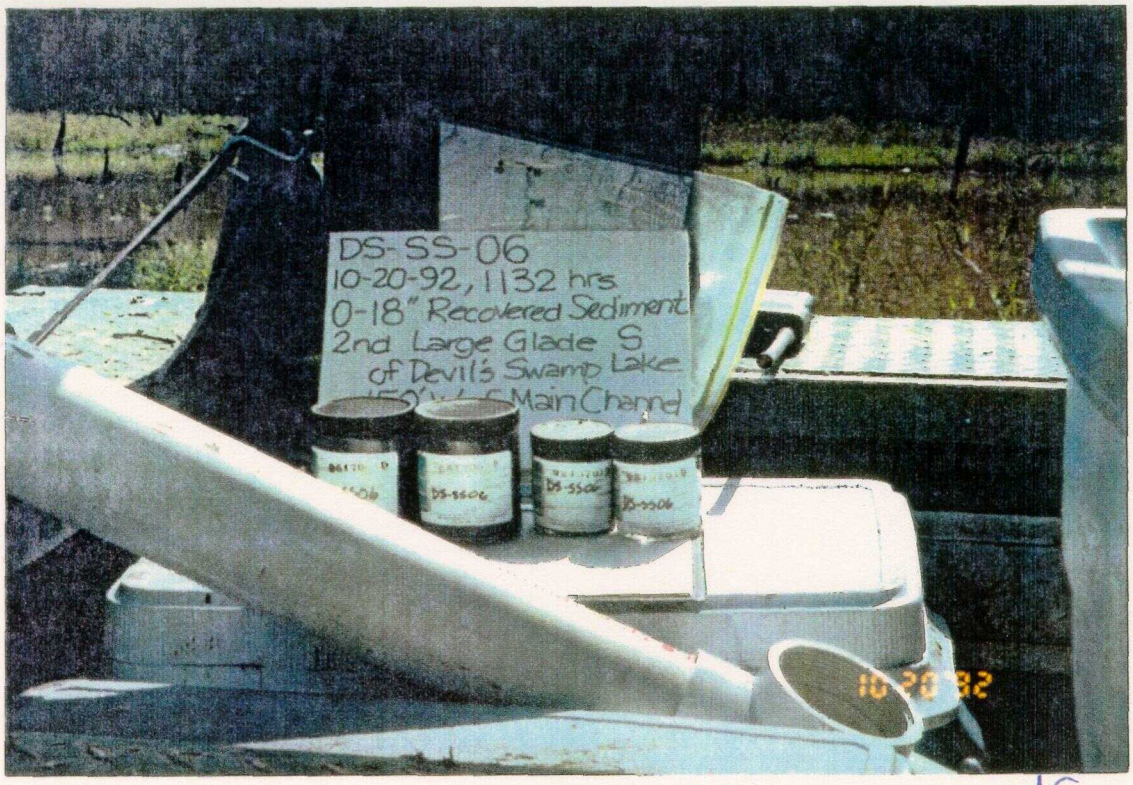


Date: 10/20/92 Time: 1055 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: East Reference in Logbook: Page 16

Picture Description: Sample DS-SS-05

PHOTOGRAPH NO. 5



Date: 10/20/92 Time: 1150 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: South Reference in Logbook: Page 16

Picture Description: Sample DS-SS-06

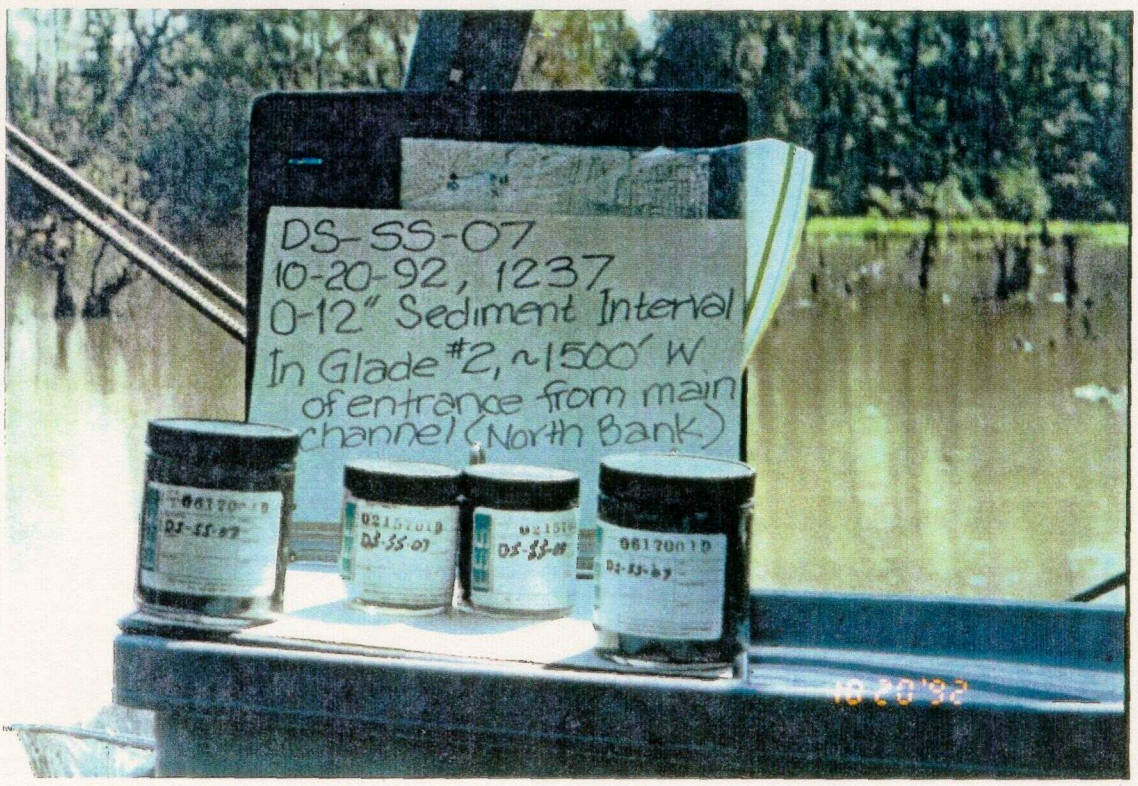
PHOTOGRAPH NO. 6

Date: 10/24/92 Time: 1130 Picture Taken by/Witness: L. Vega/M. Juscius

Direction Facing: South Reference in Logbook: Page 39

Picture Description: Location of sample DS-SS-06

PHOTOGRAPH NO. 7



Date: 10/20/92 Time: 1248 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: South-southeast Reference in Logbook: Page 18

Picture Description: Sample DS-SS-07

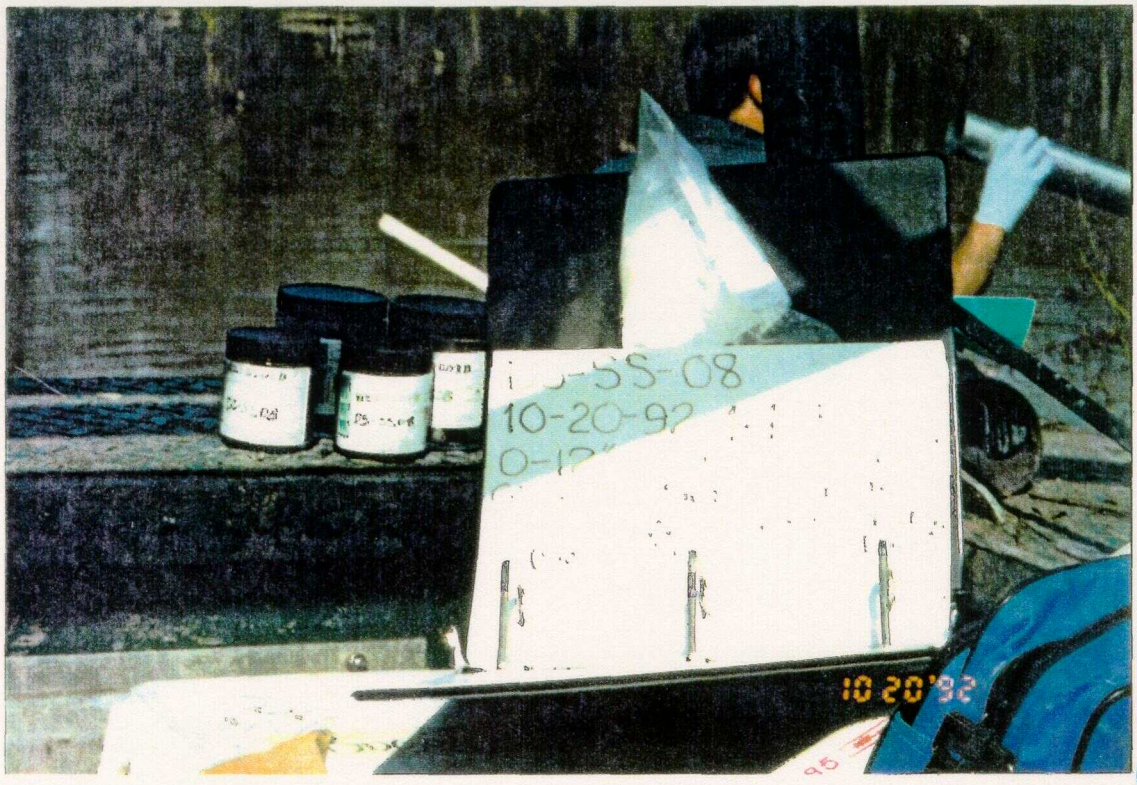
PHOTOGRAPH NO. 8

Date: 10/24/92 Time: 1110 Picture Taken by/Witness: P. Dubois/M. Juscius

Direction Facing: West Reference in Logbook: Page 39

Picture Description: Location of sample DS-SS-07

PHOTOGRAPH NO. 9



Date: 10/20/92 Time: 1419 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: Northeast Reference in Logbook: Page 18

Picture Description: Sample DS-SS-08

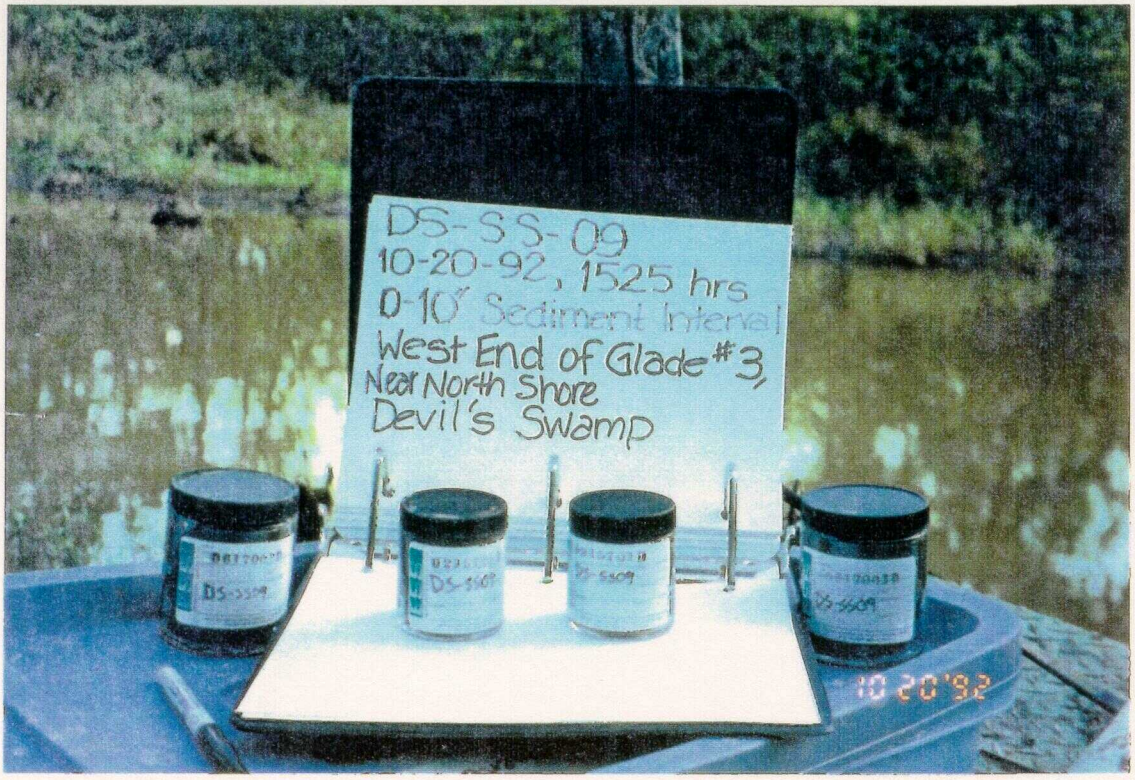
PHOTOGRAPH NO. 10

Date: 10/24/92 Time: 1140 Picture Taken by/Witness: P. Dubois/M. Juscius

Direction Facing: South Reference in Logbook: Page 39

Picture Description: View from south of DS-SS-08

PHOTOGRAPH NO. 11

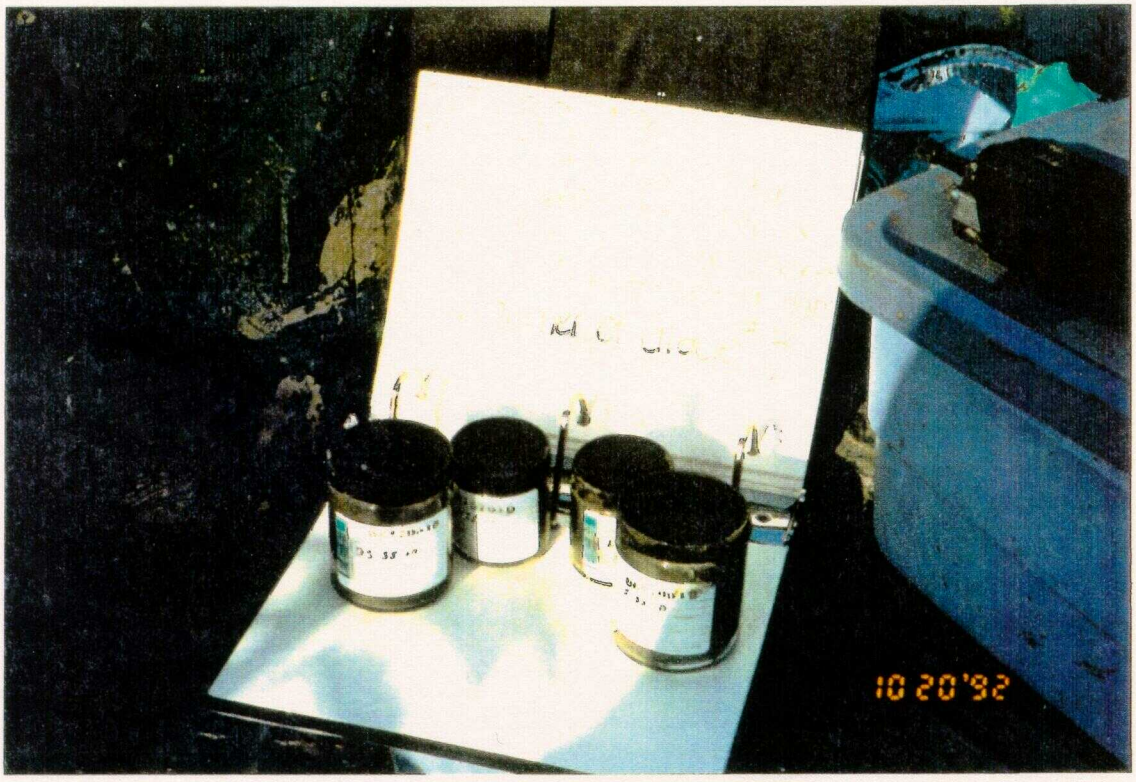


Date: 10/20/92 Time: 1538 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: South Reference in Logbook: Page 19

Picture Description: Sample DS-SS-09

PHOTOGRAPH NO. 12



Date: 10/20/92 Time: 1612 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Not applicable Reference in Logbook: Pages 19 and 20

Picture Description: Sample DS-SS-10

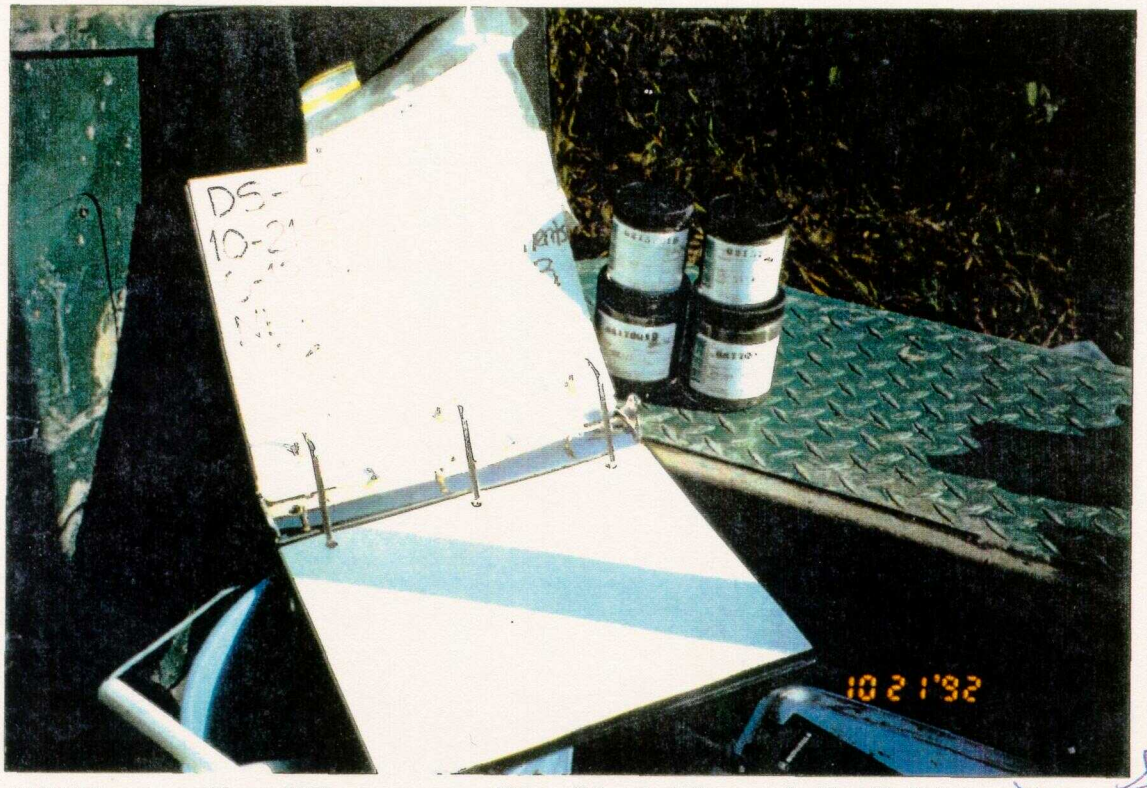
PHOTOGRAPH NO. 13

Date: 10/24/92 Time: 1221 Picture Taken by/Witness: P. Dubois/M. Juscius PMD

Direction Facing: Northeast Reference in Logbook: Page 39

Picture Description: Location of sample DS-SS-10

PHOTOGRAPH NO. 14



Date: 10/21/92 Time: 0949 Picture Taken by/Witness: L. Vega/P. Dubois PMD

Direction Facing: North Reference in Logbook: Page 21

Picture Description: Sample DS-SS-11

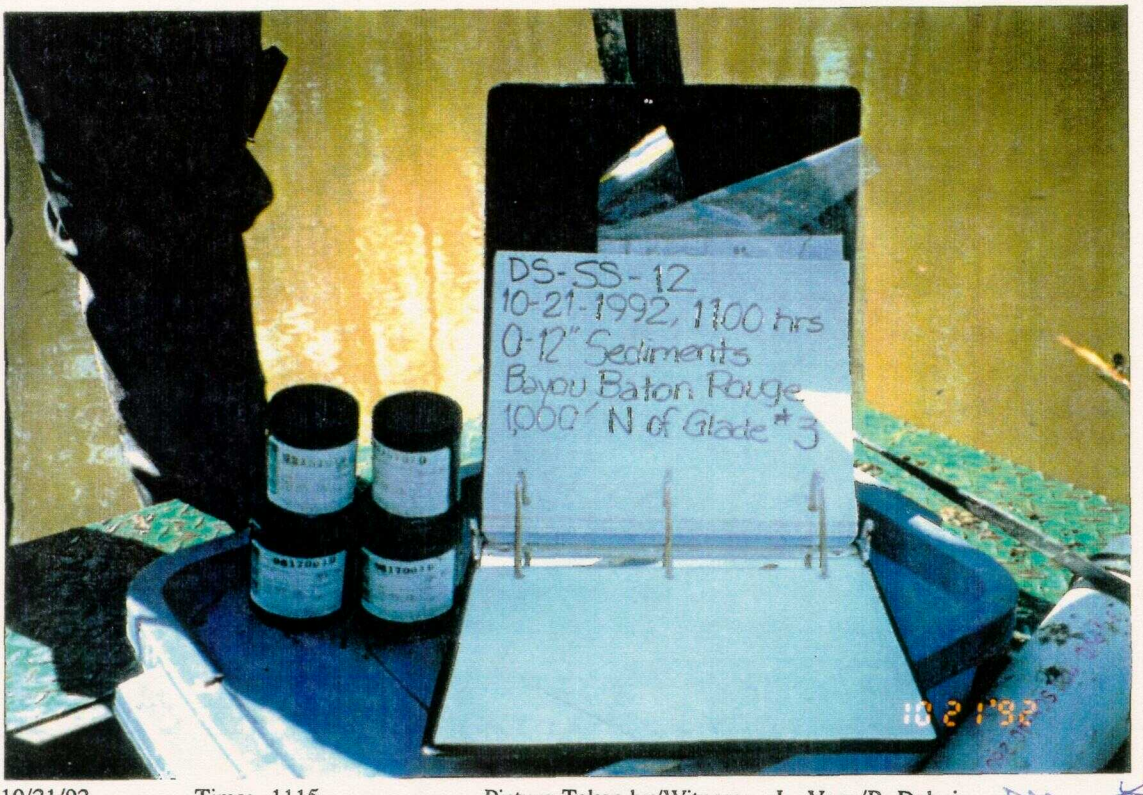
PHOTOGRAPH NO. 15

Date: 10/21/92 Time: 0950 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Northwest Reference in Logbook: Page 21

Picture Description: Location of sample DS-SS-11

PHOTOGRAPH NO. 16



Date: 10/21/92 Time: 1115 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Southwest Reference in Logbook: Page 22

Picture Description: Sample DS-SS-12

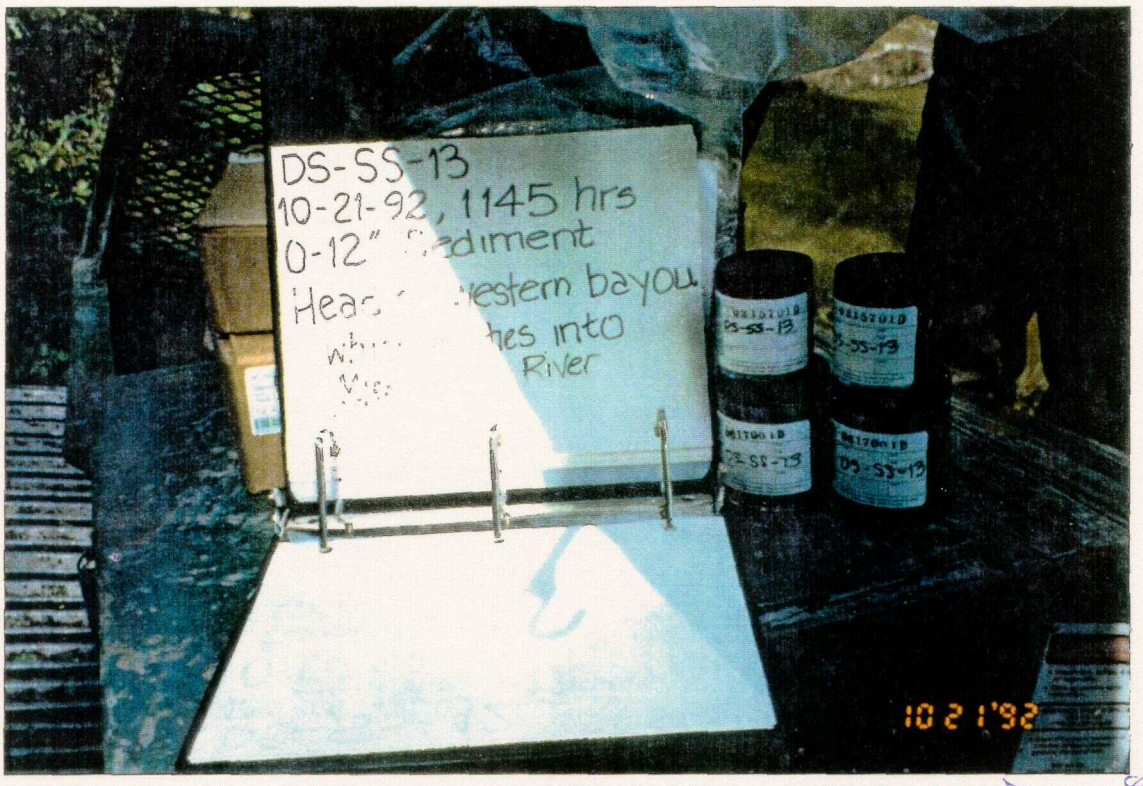
PHOTOGRAPH NO. 17

Date: 10/21/92 Time: 1118 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: Northwest Reference in Logbook: Page 22

Picture Description: View from location of sample DS-SS-12, upstream along southern Bayou Baton Rouge

PHOTOGRAPH NO. 18



Date: 10/21/92 Time: 1200 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: North Reference in Logbook: Page 24

Picture Description: Sample DS-SS-13

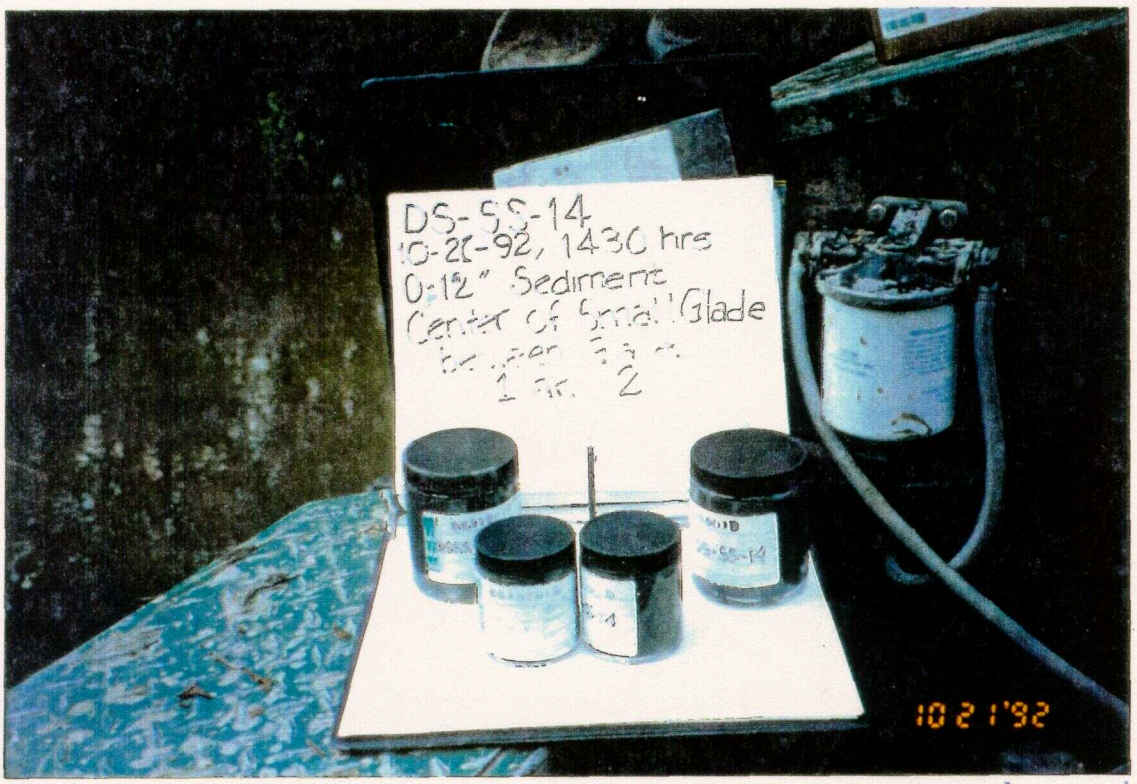
PHOTOGRAPH NO. 19

Date: 10/21/92 Time: 1145 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: North Reference in Logbook: Page 23

Picture Description: View at the head of southern Bayou Baton Rouge (upstream of DS-SS-13)

PHOTOGRAPH NO. 20

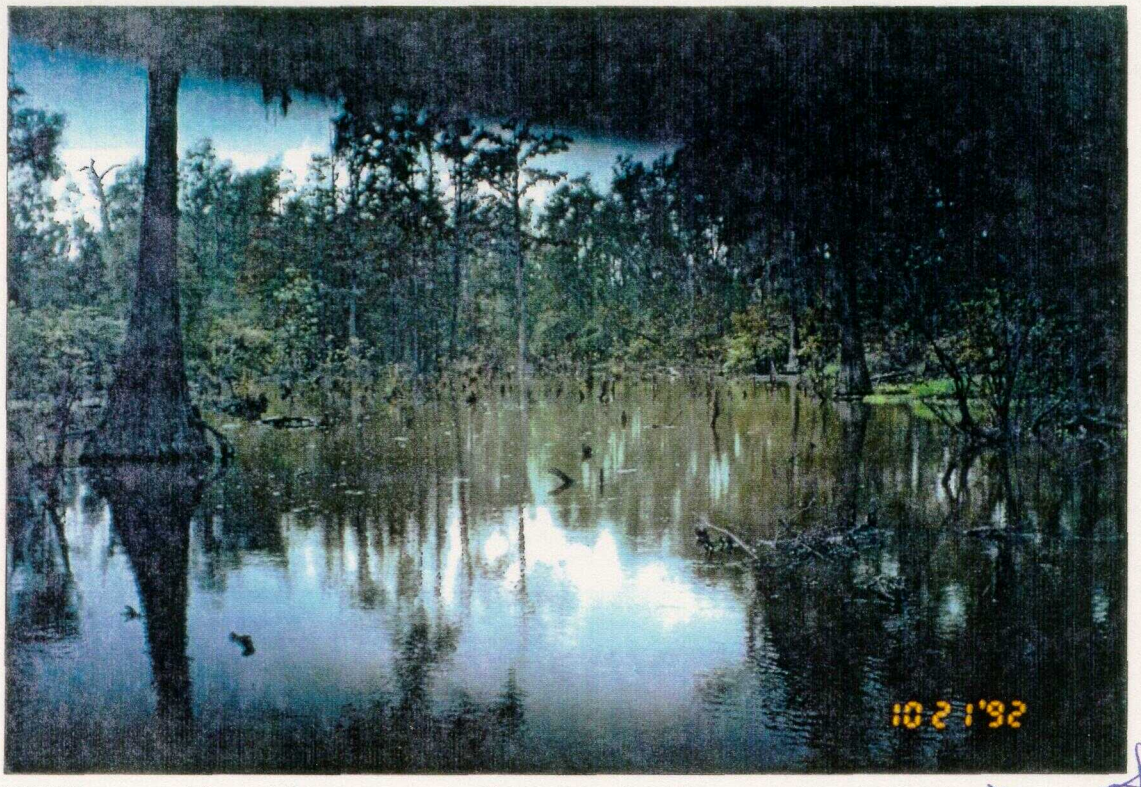


Date: 10/21/92 Time: 1439 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: Northwest Reference in Logbook: Page 25

Picture Description: Sample DS-SS-14

PHOTOGRAPH NO. 21

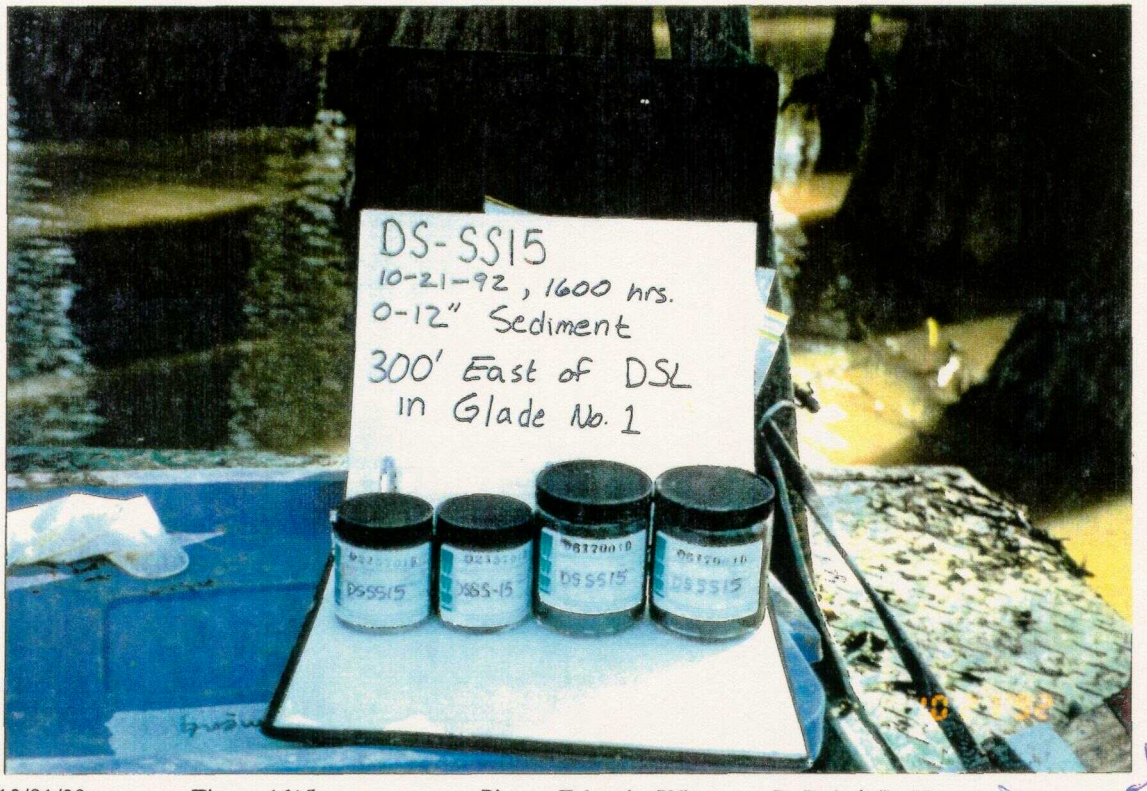


Date: 10/21/92 Time: 1439 Picture Taken by/Witness: L. Vega/P. Dubois PDB

Direction Facing: West Reference in Logbook: Page 25

Picture Description: Location of sample DS-SS-14, at west end of the small glade between glades 1 and 2

PHOTOGRAPH NO. 22



Date: 10/21/92 Time: 1615 Picture Taken by/Witness: P. Dubois/L. Vega PDB

Direction Facing: South Reference in Logbook: Page 26

Picture Description: Sample DS-SS-15

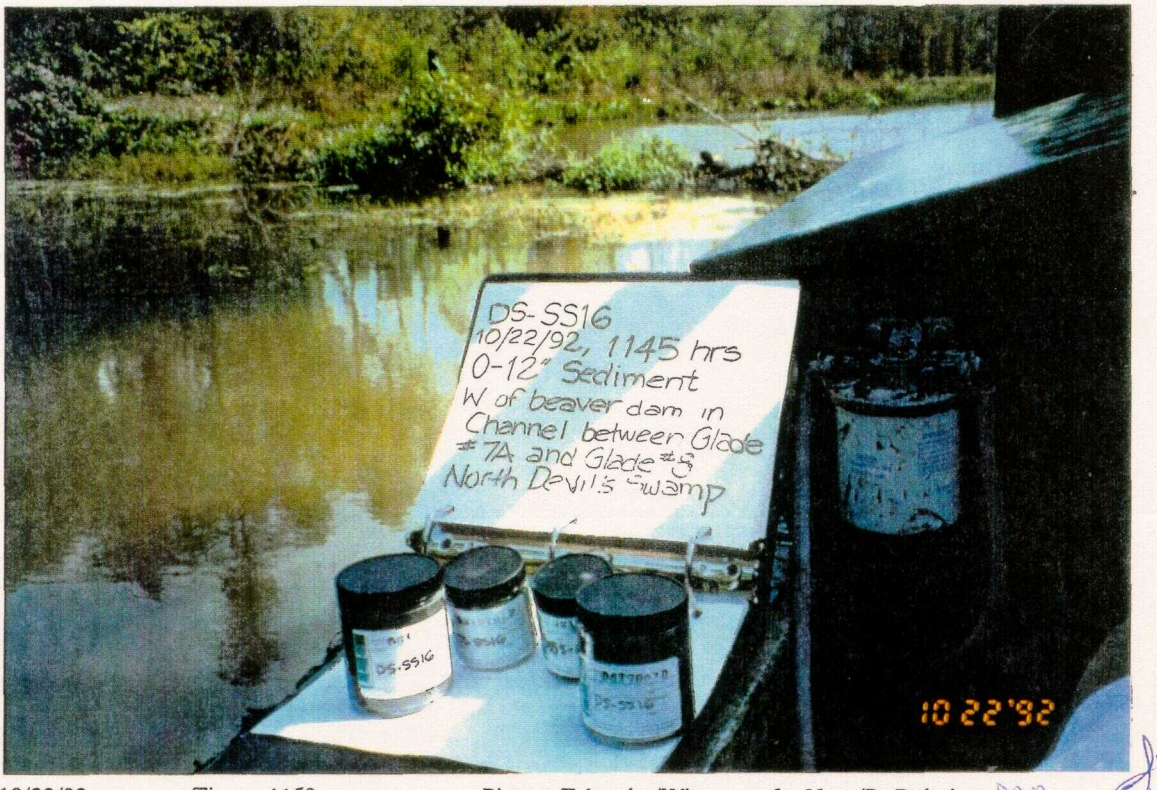
PHOTOGRAPH NO. 23

Date: 10/21/92 Time: 1622 Picture Taken by/Witness: P. Dubois/L.Vega PBD

Direction Facing: West Reference in Logbook: Page 26

Picture Description: View west, into glade 1, from location of sample DS-SS-15

PHOTOGRAPH NO. 24

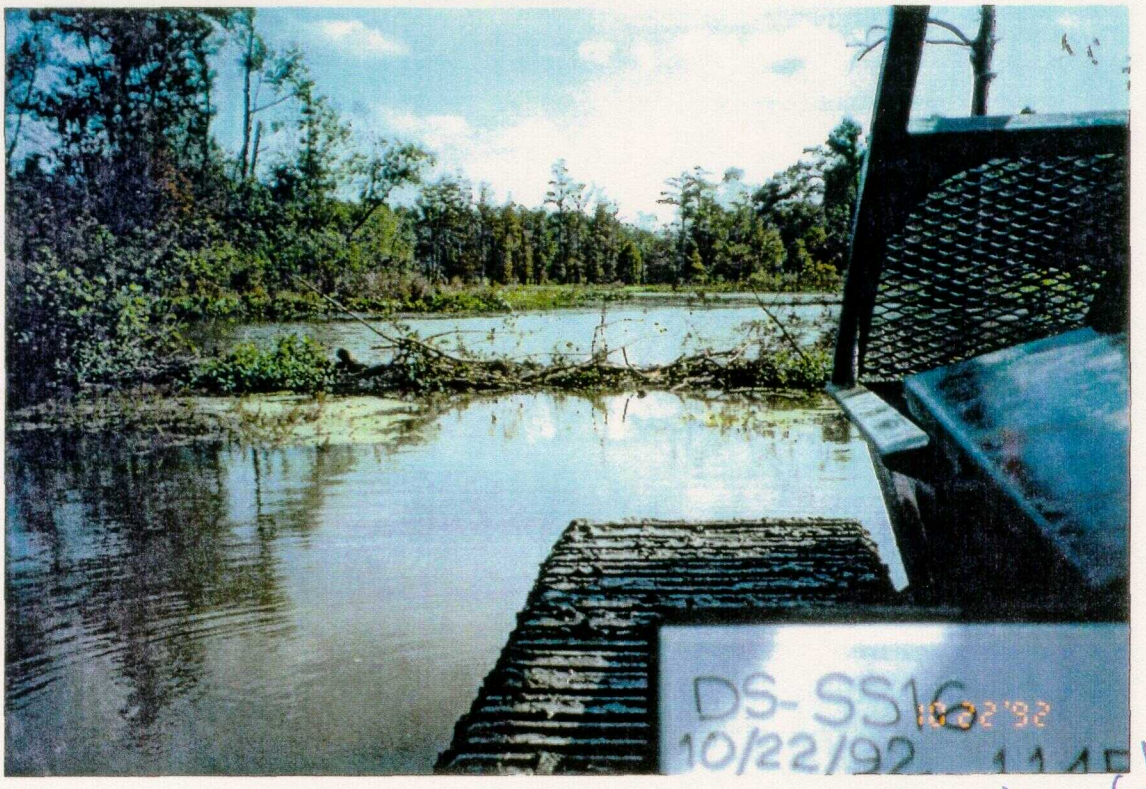


Date: 10/22/92 Time: 1159 Picture Taken by/Witness: L. Vega/P. Dubois PBD

Direction Facing: East Reference in Logbook: Page 32

Picture Description: Sample DS-SS-16; note beaver dam in background.

PHOTOGRAPH NO. 25

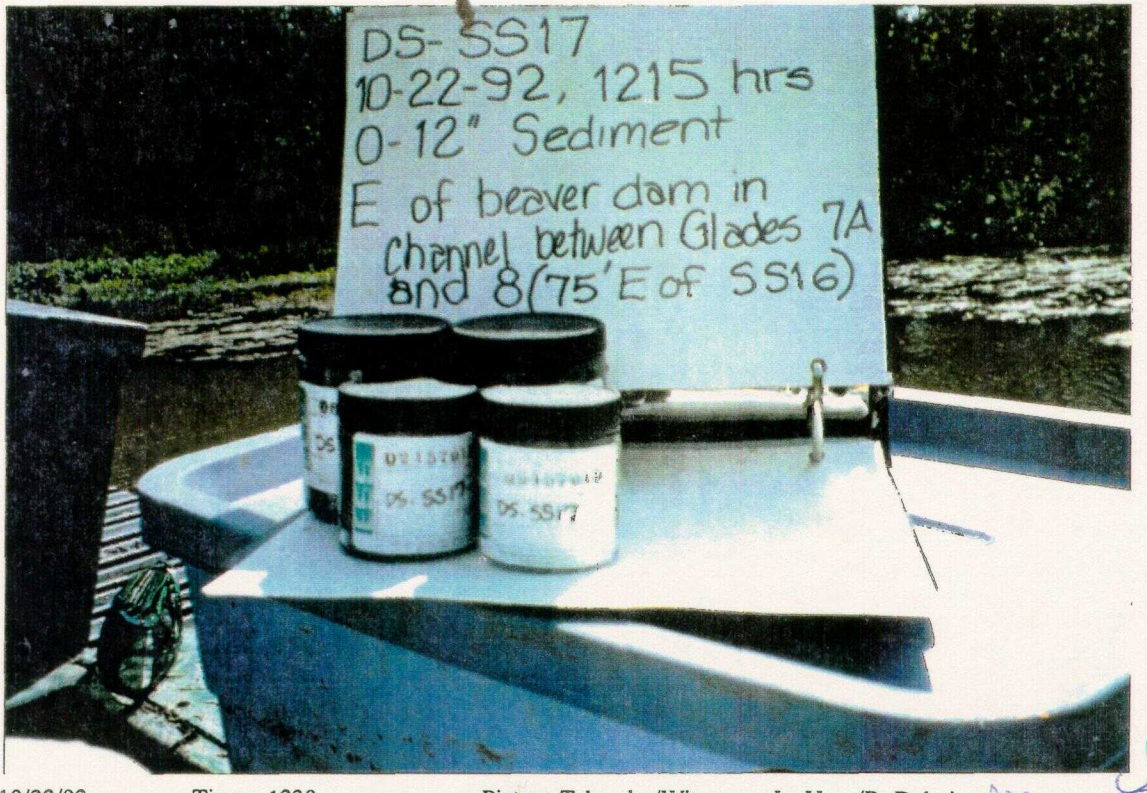


Date: 10/22/92 Time: 1159 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: East Reference in Logbook: Page 32

Picture Description: Beaver dam, as viewed from location of sample DS-SS-16

PHOTOGRAPH NO. 26

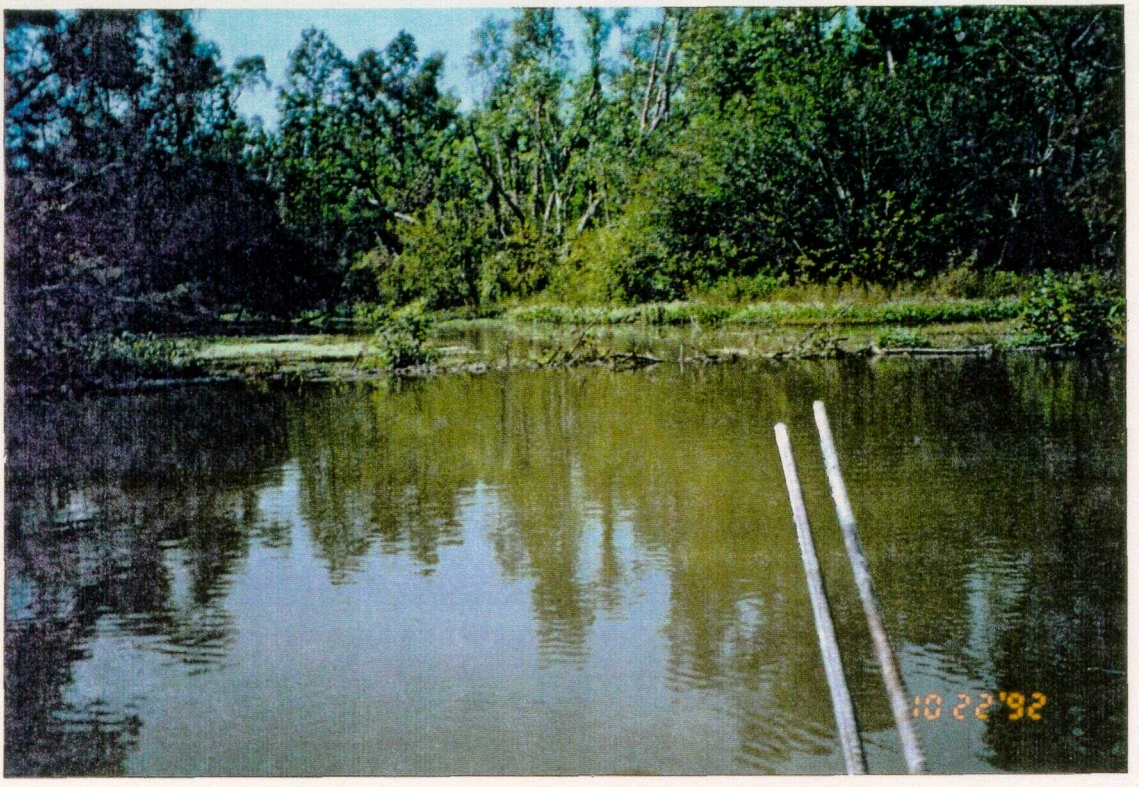


Date: 10/22/92 Time: 1230 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Not applicable Reference in Logbook: Page 32

Picture Description: Sample DS-SS-17

PHOTOGRAPH NO. 27



Date: 10/22/92 Time: 1220 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: West Reference in Logbook: Page 32

Picture Description: Beaver dam, as viewed from location of sample DS-SS-17

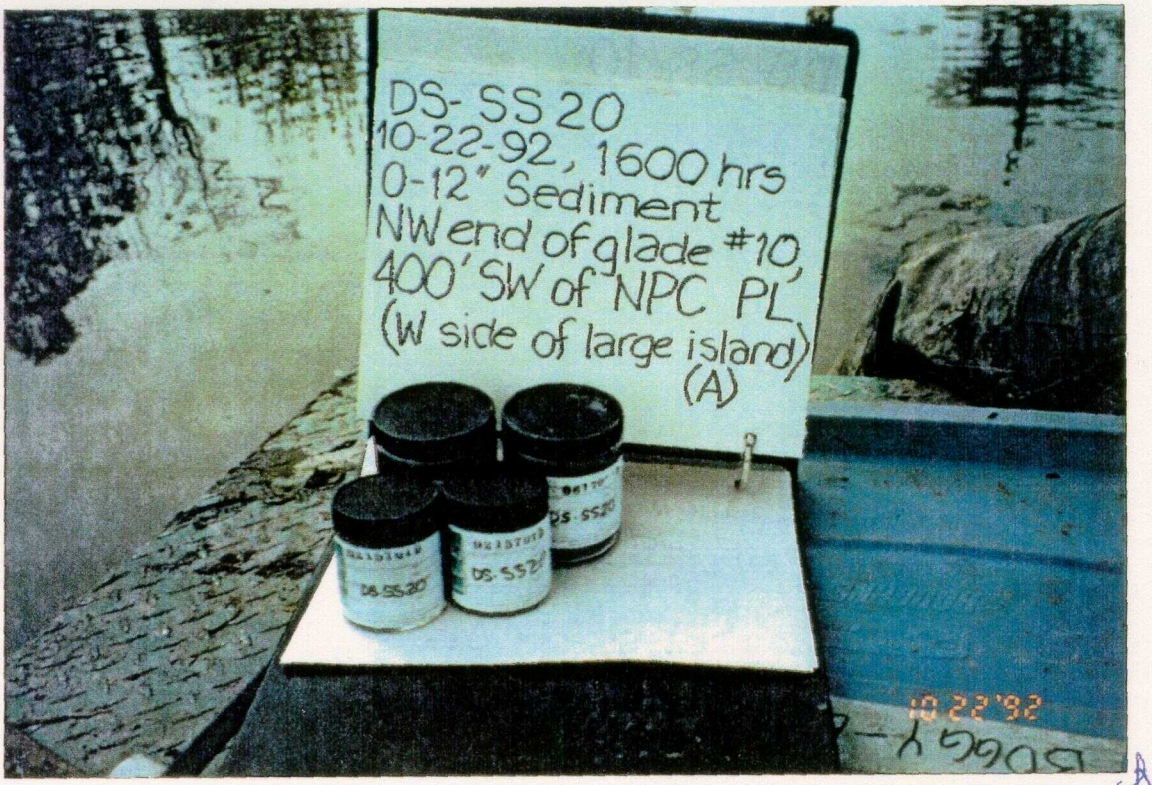
PHOTOGRAPH NO. 28

Date: 10/22/92 Time: 1415 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: North Reference in Logbook: Page 33

Picture Description: View of NPC tent from location of samples DS-SS-18 and DS-SS-19 (duplicate)

PHOTOGRAPH NO. 29



Date: 10/22/92 Time: 1605 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: North Reference in Logbook: Page 34

Picture Description: Sample DS-SS-20

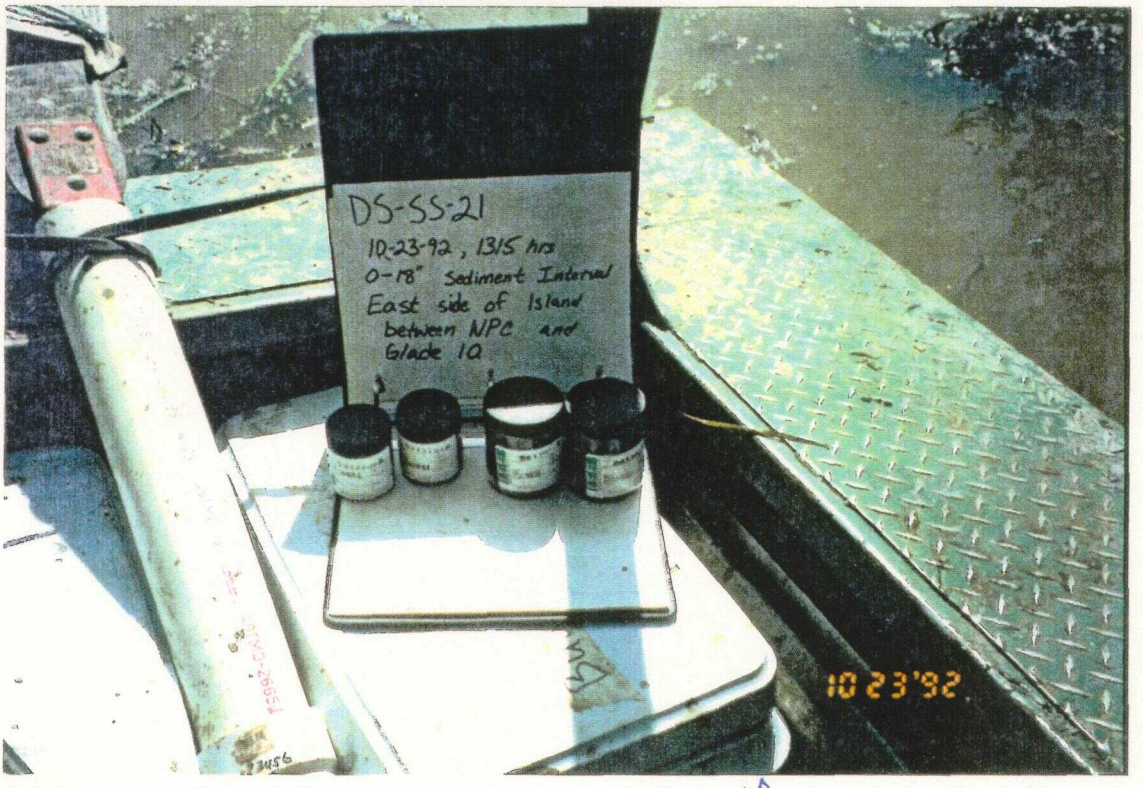
PHOTOGRAPH NO. 30

Date: 10/22/92 Time: 1605 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: South Reference in Logbook: Page 34

Picture Description: View south into glade 10, from location of sample DS-SS-20

PHOTOGRAPH NO. 31

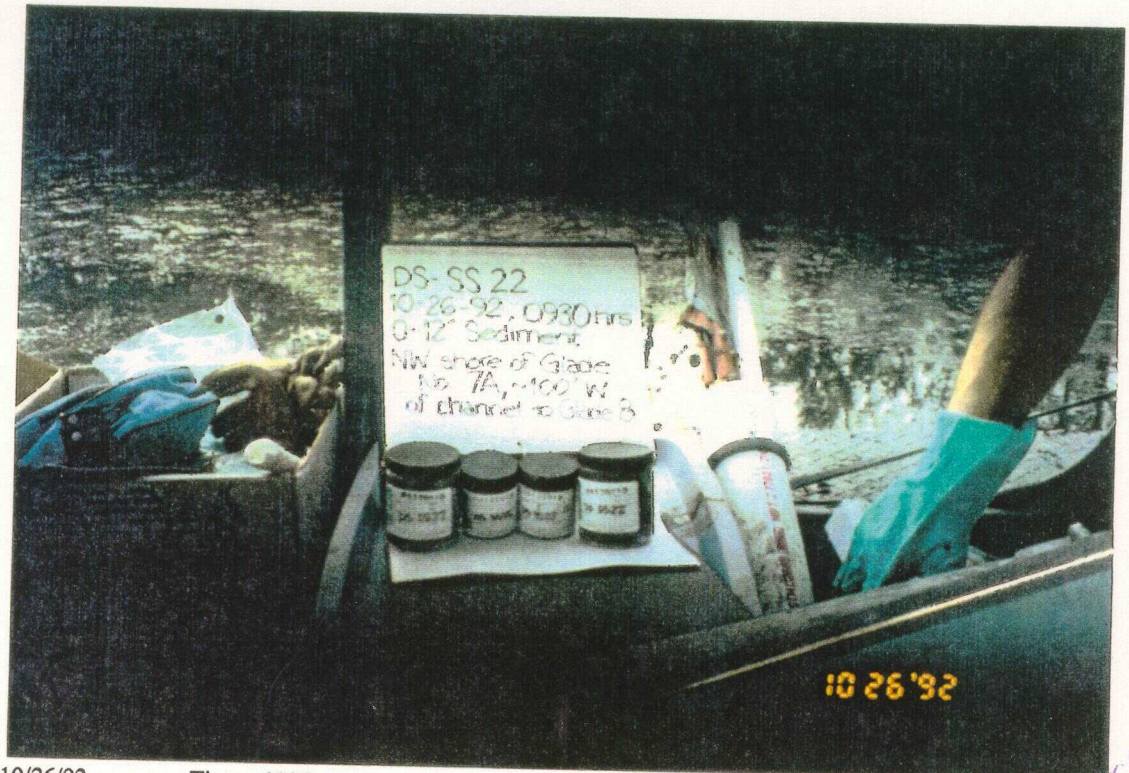


Date: 10/23/92 Time: 1345 Picture Taken by/Witness: MB M. Butler/P. Dubois PDD
Direction Facing: Not applicable Reference in Logbook: Page 38
Picture Description: Sample DS-SS-21

PHOTOGRAPH NO. 32

Date: 10/23/92 Time: 1345 Picture Taken by/Witness: MB M. Butler/P. Dubois PDD
Direction Facing: Northeast Reference in Logbook: Page 38
Picture Description: View to the northeast, from location of sample DS-SS-21

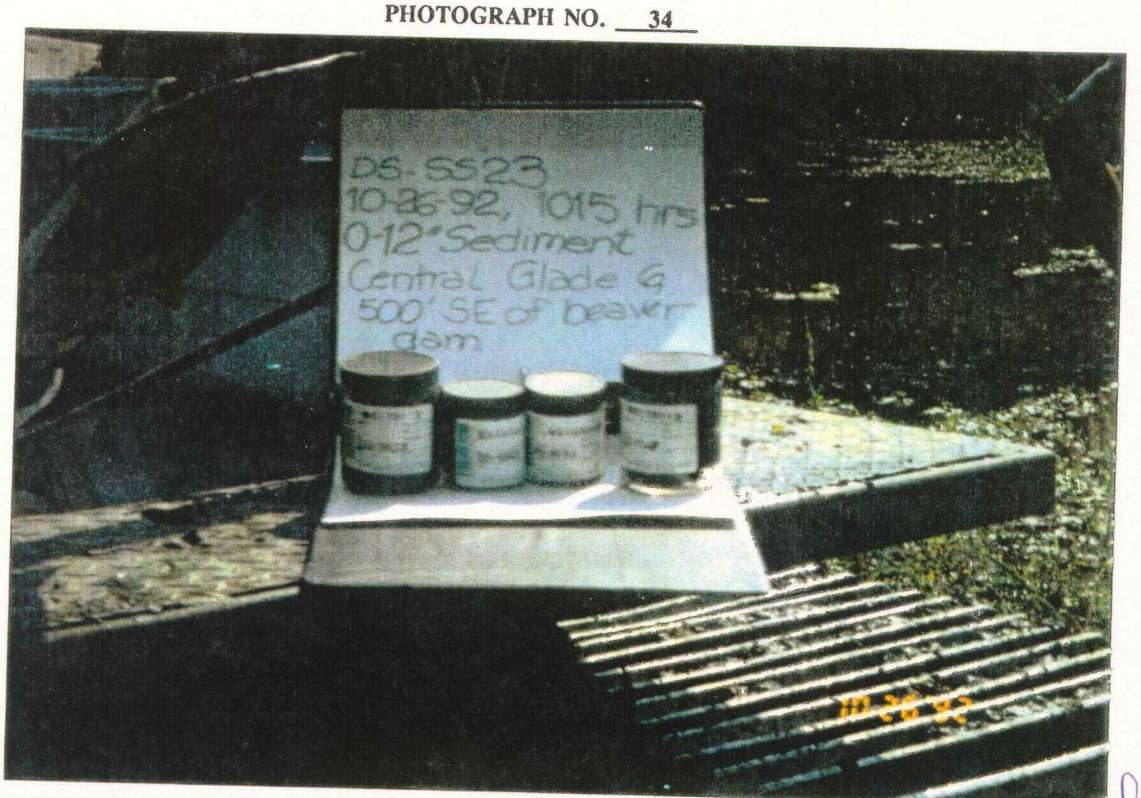
PHOTOGRAPH NO. 33



Date: 10/26/92 Time: 0935
Direction Facing: South
Picture Description: Sample DS-SS-22

Picture Taken by/Witness: L. Vega/P. Dubois PDD
Reference in Logbook: Page 42

PHOTOGRAPH NO. 34



Date: 10/26/92 Time: 1030
Direction Facing: Not applicable
Picture Description: Sample DS-SS-23

Picture Taken by/Witness: L. Vega/P. Dubois PDD
Reference in Logbook: Page 42

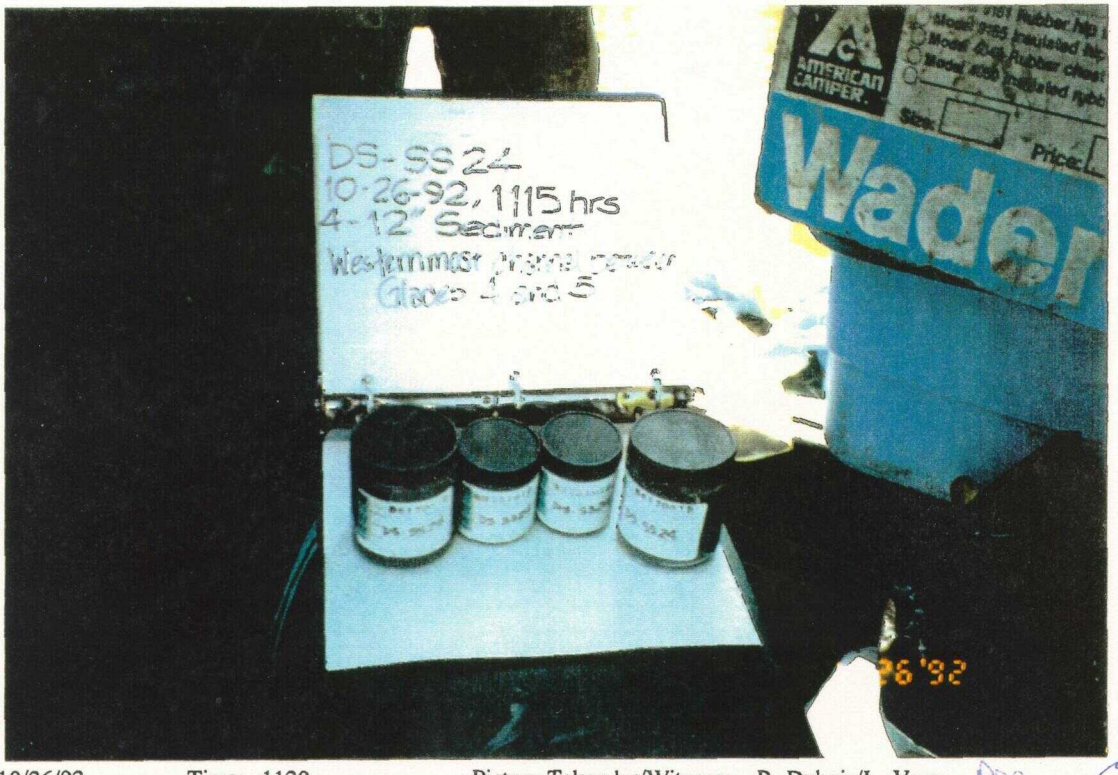
PHOTOGRAPH NO. 35

Date: 10/26/92 Time: 1030 Picture Taken by/Witness: P. Dubois/L. Vega PDD

Direction Facing: South Reference in Logbook: Page 42

Picture Description: Location of sample DS-SS-23

PHOTOGRAPH NO. 36

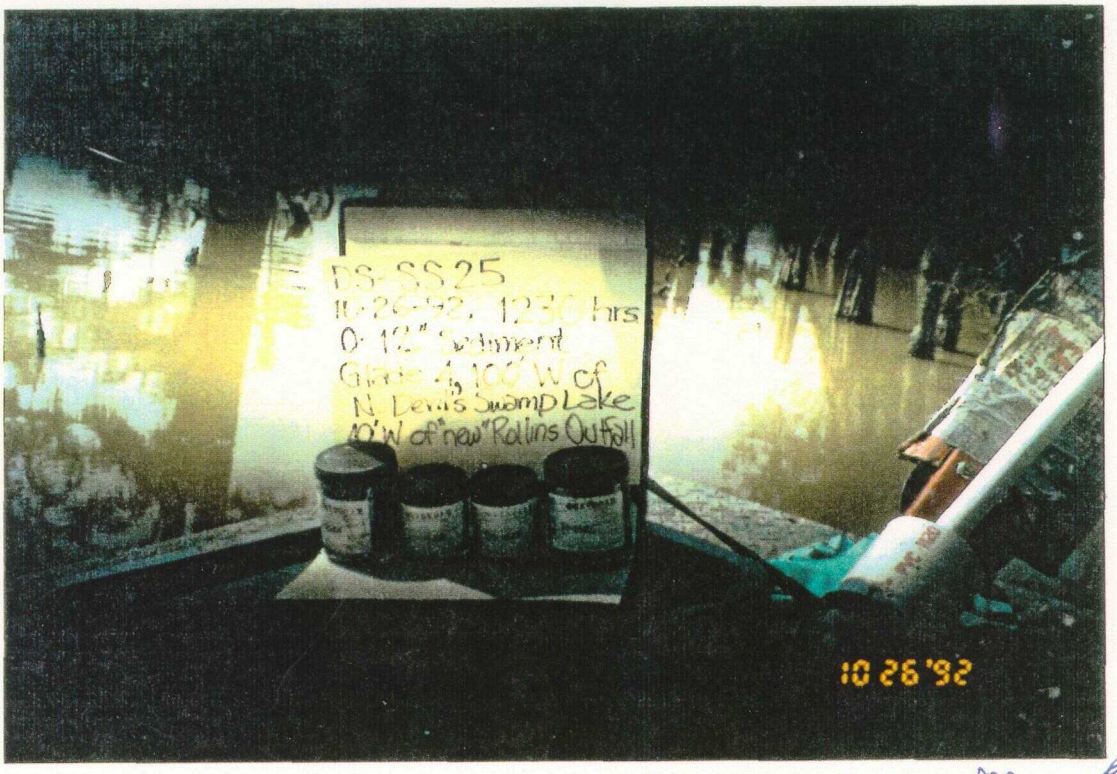


Date: 10/26/92 Time: 1120 Picture Taken by/Witness: P. Dubois/L. Vega PDD

Direction Facing: Southeast Reference in Logbook: Page 43

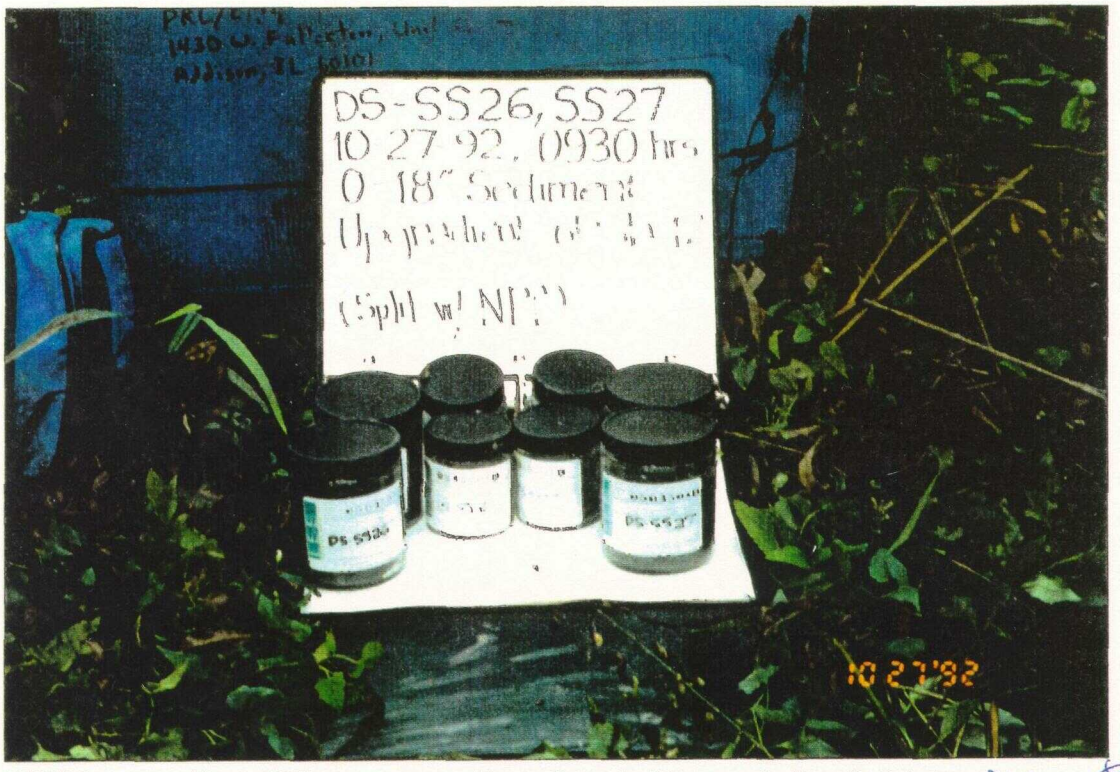
Picture Description: Sample DS-SS-24

PHOTOGRAPH NO. 37



Date: 10/26/92 Time: 1235 Picture Taken by/Witness: L. Vega/P. Dubois PDD
Direction Facing: Not applicable Reference in Logbook: Page 43
Picture Description: Sample DS-SS-25

PHOTOGRAPH NO. 38



Date: 10/27/92 Time: 0958 Picture Taken by/Witness: L. Vega/P. Dubois PDD
Direction Facing: South Reference in Logbook: Page 47
Picture Description: Samples DS-SS-26 and DS-SS-27 (duplicate)

PHOTOGRAPH NO. 39

Date: 10/27/92 Time: 0950 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Northwest Reference in Logbook: Page 47

Picture Description: Distributary channel sampled for DS-SS-26 and DS-SS-27

PHOTOGRAPH NO. 40

Date: 10/27/92 Time: 1120 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: South Reference in Logbook: Page 48

Picture Description: Location of sample DS-SS-28

PHOTOGRAPH NO. 41

Date: 10/27/92 Time: 1330 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Not applicable Reference in Logbook: Page 48

Picture Description: Location of sample DS-SS-29

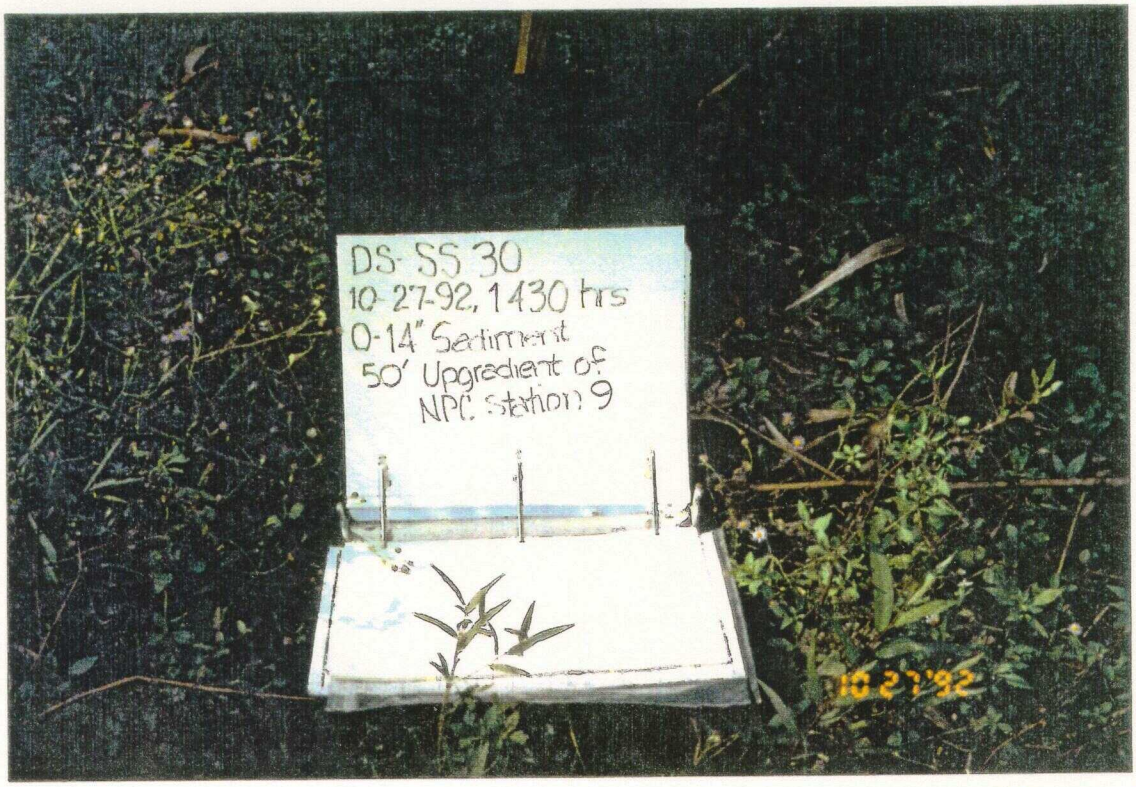
PHOTOGRAPH NO. 42

Date: 10/27/92 Time: 1335 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Southwest Reference in Logbook: Page 48

Picture Description: Extracting sample DS-SS-29

PHOTOGRAPH NO. 43



Date: 10/27/92 Time: 1443 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Northwest Reference in Logbook: Page 49

Picture Description: Sample DS-SS-30

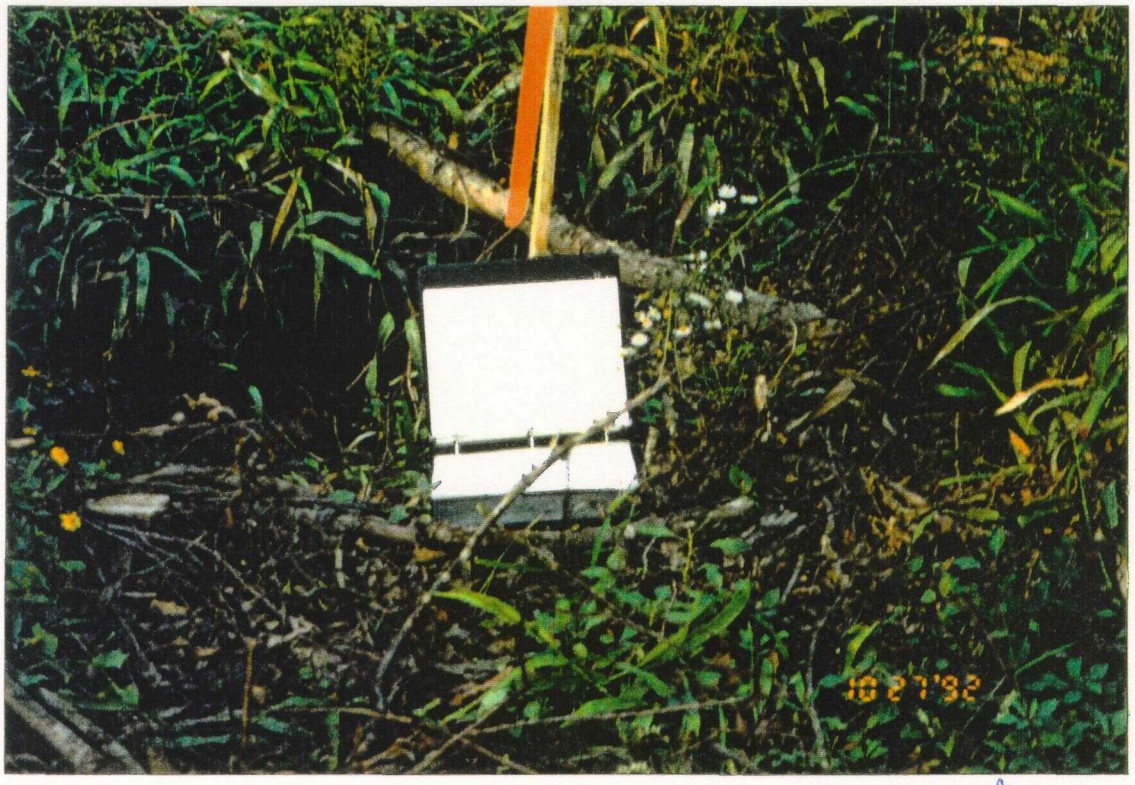
PHOTOGRAPH NO. 44

Date: 10/27/92 Time: 1443 Picture Taken by/Witness: L. Vega/P. Dubois PDD

Direction Facing: Northwest Reference in Logbook: Page 49

Picture Description: Location of sample DS-SS-30

PHOTOGRAPH NO. 45

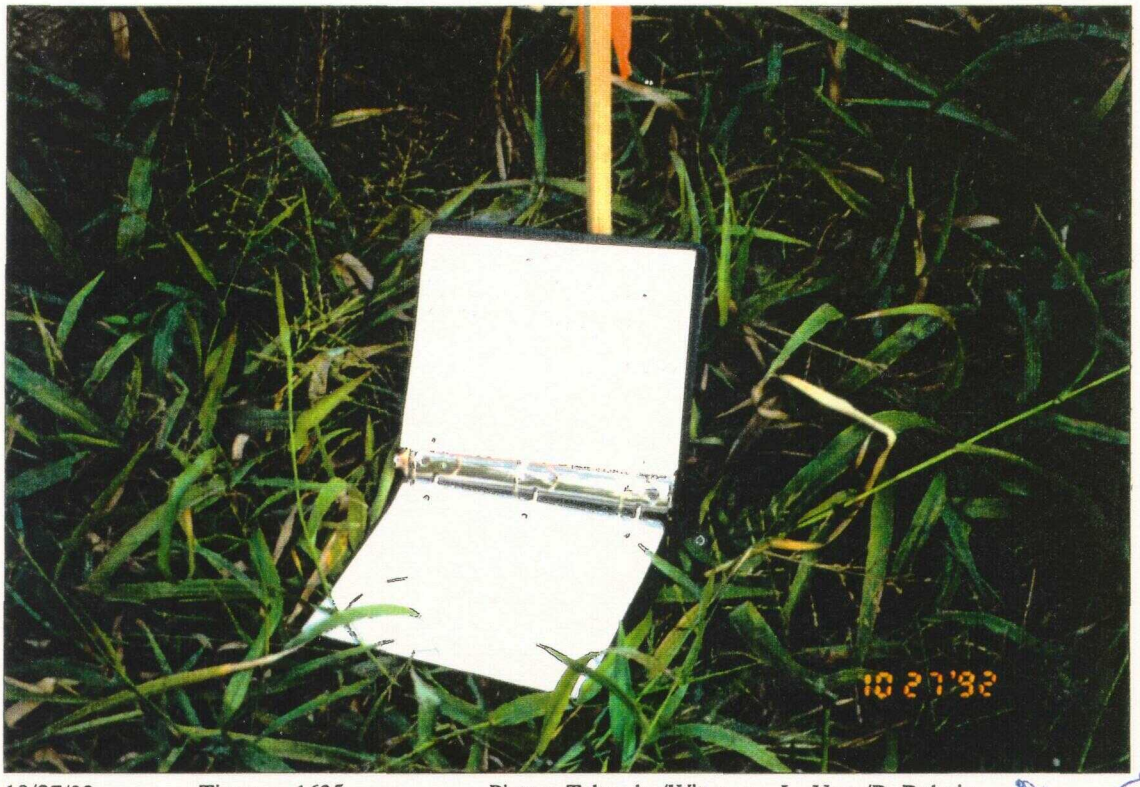


Date: 10/27/92 Time: 1612 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: North Reference in Logbook: Page 49

Picture Description: Samples DS-SS-31 and DS-SS-32 (duplicate)

PHOTOGRAPH NO. 46



Date: 10/27/92 Time: 1635 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: Not applicable Reference in Logbook: Page 49

Picture Description: Location of sample DS-SS-33

PHOTOGRAPH NO. 47

Date: 10/28/92 Time: 1050 Picture Taken by/Witness: T. Gardner/P. Dubois PDD ASS
Direction Facing: West Reference in Logbook: Page 53
Picture Description: Sample DS-SS-34

PHOTOGRAPH NO. 48

Date: 10/28/92 Time: 1128 Picture Taken by/Witness: P. Dubois/T. Gardner PDD ASS
Direction Facing: West Reference in Logbook: Page 54
Picture Description: Sample DS-SS-35

PHOTOGRAPH NO. 49

Date: 10/28/92 Time: 1235 Picture Taken by/Witness: P. Dubois/T. Gardner

Direction Facing: West Reference in Logbook: Page 54

Picture Description: Sample DS-SS-36

PHOTOGRAPH NO. 50

Date: 10/19/92 Time: 1238 Picture Taken by/Witness: L. Vega/P. Dubois

Direction Facing: East Reference in Logbook: Page 6

Picture Description: Sample DS-SW-01

PHOTOGRAPH NO. 51

Date: 10/19/92 Time: 1547 Picture Taken by/Witness: M. Butler/M. Juscius
Direction Facing: Not applicable Reference in Logbook: Page 2, Devil's Swamp Lake logbook
Picture Description: Sample DS-SW-02, collected about 300 feet west of the Rollins pipeline (new outfall)

PHOTOGRAPH NO. 52

Date: 10/27/92 Time: 1618 Picture Taken by/Witness: L. Vega/P. Dubois
Direction Facing: North Reference in Logbook: Page 49
Picture Description: Sample DS-SW-02X

PHOTOGRAPH NO. 53

Date: 10/28/92 Time: 0938 Picture Taken by/Witness: T. Gardner/P. Dubois PDD

Direction Facing: West Reference in Logbook: Page 53

Picture Description: Sample DS-SW-03

APPENDIX B
DATA SUMMARY TABLES

TABLE B-1
DEVIL'S SWAMP ORGANIC
ANALYTICAL DATA SUMMARY

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sheet 1 of 24

Sample ID/Matrix	FY305/Water		FY307/Water		FY401/Soil		FY402/Soil		FY403/Soil		FY404/Soil	
Percent Solid	NA		NA		52		50		49		56	
Station No.	DS-SW-02		DS-SW-01		DS-SS-01		DS-SS-02		DS-SS-03		DS-SS-04	
Analyte/CAS Number	ug/L	Q	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	10	U	10	U	51	J	32		65	J	12	J
Acetone/67-64-1	10	U	10	U	140	J	160		250	J	88	
2-Butanone/78-93-3	10	U	10	U	17	J	20	U	22	J	17	J
Carbon Disulfide/75-15-0	10	U	10	U	19	U	20	U	22	U	18	U
1,1,1-Trichloroethane/71-55-6	10	U	10	U	19	U	20	U	20	U	18	U
Trichloroethene/79-01-6	10	U	10	U	19	U	20	U	20	U	18	U
1,1,2-Trichloroethane/79-00-5	10	U	10	U	19	U	20	U	20	U	18	U
Benzene/71-43-2	10	U	10	U	19	U	20	U	20	U	18	U
Tetrachloroethene/127-18-4	10	U	10	U	19	U	20	U	20	U	18	U
1,1,2,2-Tetrachloroethane/79-34-5	10	U	10	U	19	U	20	U	20	U	18	U
Toluene/108-88-3	10	U	10	U	19	U	20	U	20	U	18	U
Chlorobenzene/108-90-7	10	U	10	U	19	U	20	U	20	U	18	U
Ethylbenzene/100-41-4	10	U	10	U	19	U	20	U	20	U	18	U
Xylene (total)/1330-20-7	10	U	10	U	19	U	20	U	20	U	18	U
1,3-Dichlorobenzene/541-73-1	10	U	10	U	630	U	650	U	670	U	590	U
1,4-Dichlorobenzene/106-46-7	10	U	10	U	110	J	650	U	670	U	52	J
1,2-Dichlorobenzene/95-50-1	10	U	10	U	380	J	650	U	43	J	250	J
Hexachloroethane/67-72-1	10	U	10	U	630	U	650	U	670	U	590	U
1,2,4-Trichlorobenzene/120-82-1	10	U	10	U	630	U	650	U	670	U	590	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY305/Water		FY307/Water		FY401/Soil		FY402/Soil		FY403/Soil		FY404/Soil	
Percent Solid	NA		NA		52		50		49		56	
Station No.	DS-SW-02		DS-SW-01		DS-SS-01		DS-SS-02		DS-SS-03		DS-SS-04	
Analyte/CAS Number	ug/L	Q	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	10	U	10	U	56	J	650	U	670	U	590	U
2-Methylnaphthalene/91-57-6	10	U	10	U	110	J	650	U	670	U	37	J
Hexachlorobutadiene/87-68-3	10	U	10	U	630	U	650	U	670	U	590	U
Diethylphthalate/84-66-2	10	U	10	U	630	U	650	U	670	U	590	U
Fluorene/86-73-7	10	U	10	U	70	J	650	U	670	U	590	U
N-Nitrosodiphenylamine/86-30-6	10	U	10	U	150	J	650	U	670	U	63	J
Hexachlorobenzene/118-74-1	10	U	10	U	630	U	650	U	670	U	590	U
Phenanthrene/85-01-8	10	U	10	U	440	J	650	U	81	J	200	J
Acenaphthylene/208-96-8	10	U	10	U	630	U	650	U	670	U	85	J
Anthracene/120-12-7	10	U	10	U	65	J	650	U	670	U	36	J
Carbazole/86-74-8	10	U	10	U	75	J	650	U	670	U	590	U
Di-n-butylphthalate/84-74-2	10	U	10	U	630	U	650	U	670	U	590	U
Fluoranthene/206-44-0	10	U	10	U	60	J	650	U	670	U	40	J
Pyrene/129-00-0	10	U	10	U	110	J	650	U	42	J	57	J
Butylbenzylphthalate/85-68-7	10	U	10	U	350	J	650	U	670	U	310	J
bis(2-Ethylhexyl)phthalate/117-81-7	10	U	10	U	4900		330	J	1000		5400	J
Di-n-octylphthalate/117-84-0	10	U	10	U	630	U	650	U	670	U	590	U
Benzo(a)anthracene/56-55-3	10	U	10	U	630	U	650	U	670	U	590	U
Chrysene/218-01-9	10	U	10	U	630	U	650	U	670	U	590	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY305/Water		FY307/Water		FY401/Soil		FY402/Soil		FY403/Soil		FY404/Soil	
Percent Solid	NA		NA		52		50		49		56	
Station No.	DS-SW-02		DS-SW-01		DS-SS-01		DS-SS-02		DS-SS-03		DS-SS-04	
Analyte/CAS Number	ug/L	Q	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)fluoranthene/205-99-2	10	U	10	U	630	U	650	U	670	U	590	U
Benzo(k)fluoranthene/207-08-9	10	U	10	U	630	U	650	U	670	U	590	U
Benzo(a)pyrene/5-32-8	10	U	10	U	630	U	650	U	670	U	590	U
Benzo(g,h,i)perylene/191-24-2	10	U	10	U	630	U	650	U	670	U	590	U
beta-BHC/319-85-7	10	U	10	U	3.3	UJ	3.4	U	0.82	J	3.0	U
Heptachlor Epoxide/1024-57-3	10	U	10	U	3.3	UJ	3.4	U	3.5	U	3.0	U
Endosulfan I/959-98-8	10	U	10	U	3.3	U	3.4	U	3.5	U	3.0	U
4,4'-DDE/72-55-9	10	U	10	U	6.3	U	6.6	U	6.7	U	5.9	U
Endrin/72-20-8	10	U	10	U	6.3	U	6.6	U	6.7	U	5.9	U
4,4'-DDD/72-54-8	10	U	10	U	6.3	U	6.6	U	6.7	U	5.9	U
Endrin Ketone/53494-70-5	10	U	10	U	6.3	U	6.6	U	6.7	U	5.9	U
gamma-Chlordane/5103-74-2	10	U	10	U	3.3	U	3.4	U	3.5	U	3.0	U
Aroclor-1248/12672-29-6	0.050	U	0.050	U	52	J	66	U	67	U	59	U
Aroclor-1254/11097-69-1	0.050	U	0.050	U	91		66	U	26	J	120	
Aroclor-1260/11096-82-5	0.050	U	0.050	U	63	U	66	U	67	U	59	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY405/Water		FY406/Soil		FY407/Soil		FY408/Soil		FY409/Soil		65FY410/Soil	
Percent Solid	NA		60		45		44		53		52	
Station No.	DS-ER-01		DS-SS-06		DS-SS-05		DS-SS-08		DS-SS-09		DS-SS-10	
Analyte/CAS Number	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	3	U	60		60		79		58		65	
Acetone/67-64-1	10	U	330		160		370		140		160	
2-Butanone/78-93-3	10	U	44		20	J	59		19	U	22	
Carbon Disulfide/75-15-0	10	U	17	U	22	U	23	U	19	U	19	U
1,1,1-Trichloroethane/71-55-6	10	U	17	U	22	U	23	U	19	U	19	U
Trichloroethene/79-01-6	10	U	17	U	22	U	23	U	19	U	19	U
1,1,2-Trichloroethane/79-00-5	10	U	17	U	22	U	23	U	19	U	19	U
Benzene/71-43-2	10	U	17	U	22	U	23	U	19	U	3	J
Tetrachloroethene/127-18-4	10	U	17	U	22	U	23	U	19	U	19	U
1,1,2,2-Tetrachloroethane/79-34-5	10	U	17	U	22	U	23	U	19	U	19	U
Toluene/108-88-3	10	U	17	U	22	U	23	U	19	U	8	J
Chlorobenzene/108-90-7	10	U	17	U	22	U	23	U	19	U	19	U
Ethylbenzene/100-41-4	10	U	17	U	22	U	23	U	19	U	19	U
Xylene (total)/1330-20-7	10	U	17	U	22	U	23	U	19	U	19	U
1,3-Dichlorobenzene/541-73-1	10	U	550	U	730	U	750	U	620	U	630	U
1,4-Dichlorobenzene/106-46-7	10	U	59	J	730	U	76	J	620	U	630	U
1,2-Dichlorobenzene/95-50-1	10	U	190	J	730	U	170	J	620	U	630	U
Hexachloroethane/67-72-1	10	U	550	U	730	U	750	U	620	U	630	U
1,2,4-Trichlorobenzene/120-82-1	10	U	550	U	730	U	750	U	620	U	630	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY405/Water		FY406/Soil		FY407/Soil		FY408/Soil		FY409/Soil		65FY410/Soil	
Percent Solid	NA		60		45		44		53		52	
Station No.	DS-ER-01		DS-SS-06		DS-SS-05		DS-SS-08		DS-SS-09		DS-SS-10	
Analyte/CAS Number	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	10	U	550	U	730	U	750	U	620	U	630	U
2-Methylnaphthalene/91-57-6	10	U	38	J	730	U	750	U	620	U	630	U
Hexachlorobutadiene/87-68-3	10	U	550	U	730	U	750	U	620	U	630	U
Diethylphthalate/84-66-2	10	U	550	U	730	U	750	U	620	U	630	U
Fluorene/86-73-7	10	U	550	U	730	U	750	U	620	U	630	U
N-Nitrosodiphenylamine/86-30-6	10	U	61	J	730	U	750	U	620	U	630	U
Hexachlorobenzene/118-74-1	10	U	550	U	730	U	750	U	620	U	630	U
Phenanthrene/85-01-8	10	U	180	J	91	J	91	J	42	J	52	J
Acenaphthylene/208-96-8	10	U	550	U	730	U	750	U	620	U	630	U
Anthracene/120-12-7	10	U	550	U	730	U	750	U	620	U	630	U
Carbazole/86-74-8	10	U	550	U	730	U	750	U	620	U	630	U
Di-n-butylphathalate/84-74-2	10	U	550	U	730	U	750	U	620	U	630	U
Fluoranthene/206-44-0	10	U	29	J	730	U	61	J	41	J	630	U
Pyrene/129-00-0	10	U	45	J	730	U	98	J	65	J	630	U
Butylbenzylphthalate/85-68-7	10	U	83	J	730	U	750	U	620	U	140	J
bis(2-Ethylhexyl)phthalate/117-81-7	10	U	600		730	U	350	J	160	J	1500	
Di-n-octylphthalate/117-84-0	10	U	550	U	730	U	50	J	620	U	630	U
Benzo(a)anthracene/56-55-3	10	U	550	U	730	U	750	U	620	U	630	U
Chrysene/218-01-9	10	U	550	U	730	U	750	U	620	U	630	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY405/Water		FY406/Soil		FY407/Soil		FY408/Soil		FY409/Soil		65FY410/Soil	
Percent Solid	NA		60		45		44		53		52	
Station No.	DS-ER-01		DS-SS-06		DS-SS-05		DS-SS-08		DS-SS-09		DS-SS-10	
Analyte/CAS Number	ug/L	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)fluoranthene/205-99-2	10	U	550	U	730	U	750	U	620	U	630	U
Benzo(k)fluoranthene/207-08-9	10	U	550	U	730	U	750	U	620	U	630	U
Benzo(a)pyrene/50-32-8	10	U	550	U	730	U	750	U	620	U	630	U
Benzo(g,h,i)perylene/191-24-2	10	U	550	U	730	U	750	U	620	U	630	U
beta-BHC/319-85-7	0.05	U	2.8	UJ	3.7	UJ	3.8	UJ	3.2	UJ	3.2	UJ
Heptachlor Epoxide/1024-57-3	0.05	U	2.8	UJ	3.7	UJ	3.8	UJ	3.2	UJ	3.2	UJ
Endosulfan I/959-98-8	0.05	U	2.8	UJ	3.7	UJ	3.8	UJ	3.2	UJ	3.2	UJ
4,4'-DDE/72-55-9	0.1	U	5.5	UJ	7.3	UJ	7.4	UJ	6.2	UJ	6.3	UJ
Endrin/72-20-8	0.1	U	5.5	UJ	7.3	UJ	7.4	UJ	6.2	UJ	6.3	UJ
4,4'-DDD/72-54-8	0.1	U	5.5	UJ	7.3	UJ	7.4	UJ	6.2	UJ	6.3	UJ
Endrin Ketone/53494-70-5	0.1	U	5.5	UJ	7.3	UJ	7.4	UJ	6.2	UJ	6.3	UJ
gamma-Chlordane/5103-74-2	0.05	U	2.8	UJ	3.7	UJ	3.8	UJ	3.2	UJ	3.2	UJ
Aroclor-1248/12672-29-6	1.0	U	55	UJ	73	UJ	74	UJ	62	UJ	63	UJ
Aroclor-1254/11097-69-1	1.0	U	18	J	16	J	76	J	81	J	63	UJ
Aroclor-1260/11096-82-5	1.0	U	55	UJ	73	UJ	74	UJ	62	UJ	63	UJ

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY411/Soil		FY412/Soil		FY413/Soil		FY414/Soil		FY415/Soil		FY500/Soil	
Percent Solid	46		52		65		39		43		65	
Station No.	DS-SS-11		DS-SS-12		DS-SS-13		DS-SS-14		DS-SS-15		DS-SS-07	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	28	J	61		68		54	J	120		48	
Acetone/67-64-1	120	J	320		120		310	J	470		88	
2-Butanone/78-93-3	23	J	54		22		62	J	93		16	
Carbon Disulfide/75-15-0	22	U	19	U	15	U	26	U	23	U	15	U
1,1,1-Trichloroethane/71-55-6	22	U	19	U	15	U	26	U	23	U	15	U
Trichloroethene/79-01-6	22	U	19	U	15	U	26	U	23	U	15	U
1,1,2-Trichloroethane/79-00-5	22	U	19	U	15	U	26	U	23	U	15	U
Benzene/71-43-2	22	U	19	U	15	U	26	U	23	U	15	U
Tetrachloroethene/127-18-4	22	U	19	U	15	U	26	U	23	U	15	U
1,1,2,2-Tetrachloroethane/79-34-5	22	U	19	U	15	U	26	U	23	U	15	U
Toluene/108-88-3	22	U	19	U	15	U	26	U	23	U	15	U
Chlorobenzene/108-90-7	22	U	19	U	15	U	26	U	23	U	15	U
Ethylbenzene/100-41-4	22	U	19	U	15	U	26	U	23	U	15	U
Xylene (total)/1330-20-7	22	U	19	U	15	U	26	U	23	U	15	U
1,3-Dichlorobenzene/541-73-1	710	U	630	U	500	U	840	U	760	U	500	U
1,4-Dichlorobenzene/106-46-7	710	U	630	U	500	U	160	J	760	U	500	U
1,2-Dichlorobenzene/95-50-1	710	U	630	U	500	U	840	U	760	U	500	U
Hexachloroethane/67-72-1	710	U	630	U	500	U	840	U	760	U	500	U
1,2,4-Trichlorobenzene/120-82-1	710	U	630	U	500	U	840	U	760	U	500	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY411/Soil		FY412/Soil		FY413/Soil		FY414/Soil		FY415/Soil		FY500/Soil	
Percent Solid	46		52		65		39		43		65	
Station No.	DS-SS-11		DS-SS-12		DS-SS-13		DS-SS-14		DS-SS-15		DS-SS-07	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	710	U	630	U	500	U	840	U	760	U	500	U
2-Methylnaphthalene/91-57-6	710	U	630	U	500	U	840	U	760	U	500	U
Hexachlorobutadiene/87-68-3	710	U	630	U	500	U	840	U	760	U	500	U
Diethylphthalate/84-66-2	710	U	630	U	500	U	840	U	760	U	500	U
Fluorene/86-73-7	710	U	630	U	500	U	840	U	760	U	500	U
N-Nitrosodiphenylamine/86-30-6	710	U	630	U	500	U	840	U	760	U	500	U
Hexachlorobenzene/118-74-1	710	U	630	U	500	U	840	U	760	U	500	U
Phenanthrene/85-01-8	960		630	U	500	U	190	J	41	J	26	J
Acenaphthylene/208-96-8	710	U	630	U	500	U	8840	U	760	U	500	U
Anthracene/120-12-7	140	J	630	U	500	U	840	U	760	U	500	U
Carbazole/86-74-8	710	U	630	U	500	U	840	U	760	U	500	U
Di-n-butylphthalate/84-74-2	710	U	630	U	500	U	840	U	760	U	500	U
Fluoranthene/206-44-0	99	J	630	U	36	J	92	J	73	J	29	J
Pyrene/129-00-0	120	J	630	U	33	J	140	J	170	J	49	J
Butylbenzylphthalate/85-68-7	710	U	630	U	500	U	840	U	310	J	58	J
bis(2-Ethylhexyl)phthalate/117-81-7	670	J	630	U	500	U	510	J	140	J	41	J
Di-n-octylphthalate/117-84-0	710	U	630	U	500	U	840	U	760	U	500	U
Benzo(a)Anthracene/56-55-3	710	U	630	U	500	U	67	J	53	J	500	U
Chrysene/218-01-9	710	U	630	U	500	U	100	J	100	J	500	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY411/Soil		FY412/Soil		FY413/Soil		FY414/Soil		FY415/Soil		FY500/Soil	
Percent Solid	46		52		65		39		43		65	
Station No.	DS-SS-11		DS-SS-12		DS-SS-13		DS-SS-14		DS-SS-15		DS-SS-07	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)fluoranthene/205-99-2	710	U	630	U	500	U	840	U	760	U	500	U
Benzo(k)fluoranthene/207-08-9	710	U	630	U	500	U	840	U	760	U	500	U
Benzo(a)pyrene/50-32-8	710	U	630	U	500	U	840	U	760	U	500	U
Benzo(g,h,i)perylene/191-24-2	710	U	630	U	500	U	840	U	760	U	500	U
beta-BHC/319-85-7	3.6	UJ	3.3	UJ	2.6	UJ	4.4	UJ	3.9	UJ	2.6	UJ
Heptachlor Epoxide/1024-57-3	3.6	UJ	3.3	UJ	2.6	UJ	4.4	UJ	3.9	UJ	2.6	UJ
Endosulfan I/959-98-8	3.6	UJ	3.3	UJ	2.6	UJ	4.4	UJ	3.9	UJ	2.6	UJ
4,4'-DDE/72-55-9	7.1	UJ	6.3	UJ	5.0	UJ	8.5	UJ	7.6	UJ	5.0	UJ
Endrin/72-20-8	1.3	J	6.3	UJ	5.0	UJ	8.5	UJ	7.6	UJ	5.0	UJ
4,4'-DDD/72-54-8	7.1	UJ	6.3	UJ	5.0	UJ	8.5	UJ	7.6	UJ	5.0	UJ
Endrin Ketone/53494-70-5	0.71	J	6.3	UJ	5.0	UJ	8.5	UJ	7.6	UJ	5.0	UJ
gamma-Chlordane/5103-74-2	3.6	UJ	3.3	UJ	2.6	UJ	4.4	UJ	3.9	UJ	2.6	UJ
Aroclor-1248/12672-29-6	71	UJ	63	UJ	50	UJ	120	J	94	J	50	UJ
Aroclor-1254/11097-69-1	71	UJ	63	UJ	50	UJ	130	J	89	J	46	J
Aroclor-1260/11096-82-5	71	UJ	63	UJ	50	UJ	85	UJ	76	UJ	50	UJ

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY416/Soil		FY417/Soil		FY418/Soil		FY419/Soil		FY420/Soil		FY421/Soil	
Percent Solid	39		41		39		48		44		45	
Station No.	DS-SS-16		DS-SS-17		DS-SS-18		DS-SS-19		DS-SS-20		DS-SS-21	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	390		30	U	160		41	U	56	J	18	U
Acetone/67-64-1	900	J	360	J	490	J	240	J	150	J	430	J
2-Butanone/78-93-3	120	J	24	U	91	J	43	J	35	J	63	J
Carbon Disulfide/75-15-0	26	U	24	U	26	U	21	U	23	U	22	U
1,1,1-Trichloroethane/71-55-6	26	U	24	U	26	U	21	U	23	U	22	U
Trichloroethene/79-01-6	26	U	24	U	26	U	21	U	23	U	22	U
1,1,2-Trichloroethane/79-00-5	26	U	24	U	26	U	21	U	23	U	22	U
Benzene/71-43-2	26	U	24	U	26	U	21	U	23	U	22	U
Tetrachloroethene/127-18-4	26	U	24	U	26	U	21	U	23	U	22	U
1,1,2,2-Tetrachloroethane/79-34-5	26	U	24	U	26	U	21	U	23	U	22	U
Toluene/108-88-3	26	U	24	U	3	J	21	U	23	U	22	U
Chlorobenzene/108-90-7	26	U	24	U	26	U	21	U	23	U	22	U
Ethylbenzene/100-41-4	26	U	24	U	26	U	21	U	23	U	22	U
Xylene (total)/1330-20-7	26	U	24	U	26	U	21	U	23	U	22	U
1,3-Dichlorobenzene/541-73-1	840	U	790	U	210	J	140	J	370	J	160	J
1,4-Dichlorobenzene/106-46-7	840	U	790	U	140	J	87	J	220	J	90	J
1,2-Dichlorobenzene/95-50-1	840	U	790	U	850	U	680	U	740	U	730	U
Hexachloroethane/67-72-1	840	U	790	U	850	U	680	U	740	U	730	U
1,2,4-Trichlorobenzene/120-82-1	840	U	790	U	850	U	680	U	740	U	730	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY416/Soil		FY417/Soil		FY418/Soil		FY419/Soil		FY420/Soil		FY421/Soil	
Percent Solid	39		41		39		48		44		45	
Station No.	DS-SS-16		DS-SS-17		DS-SS-18		DS-SS-19		DS-SS-20		DS-SS-21	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	840	U	790	U	850	U	680	U	740	U	730	U
2-Methylnaphthalene/91-57-6	840	U	790	U	850	U	680	U	740	U	730	U
Hexachlorobutadiene/87-68-2	840	U	790	U	850	U	680	U	740	U	730	U
Diethylphthalate/84-66-2	840	U	790	U	850	U	680	U	740	U	730	U
Fluorene/86-73-7	840	U	790	U	850	U	680	U	740	U	730	U
N-Nitrosodiphenylamine/86-30-6	840	U	790	U	850	U	680	U	740	U	730	U
Hexachlorobenzene/118-74-1	840	U	790	U	440	J	300	J	740	U	730	U
Phenanthrene/85-01-8	840	U	790	U	71	J	50	J	41	J	730	U
Acenaphthylene/208-96-8	840	U	790	U	850	U	680	U	740	U	730	U
Anthracene/120-12-7	840	U	790	U	850	U	680	U	740	U	730	U
Carbazole/86-74-8	840	U	790	U	850	U	680	U	740	U	730	U
Di-n-butylphthalate/84-74-2	840	U	790	U	850	U	680	U	740	U	730	U
Fluoranthene/206-44-0	840	U	790	U	850	U	680	U	42	J	730	U
Pyrene/129-00-0	840	U	53	J	62	J	36	J	70	J	38	J
Butylbenzylphthalate/85-68-7	840	U	790	U	850	U	680	U	740	U	730	U
bis(2-Ethylhexyl)phthalate/117-81-7	840	U	790	U	140	J	35	J	740	U	730	U
Di-n-octylphthalate/117-84-0	840	U	790	U	850	U	680	U	740	U	730	U
Benzo(a)Anthracene/56-55-3	840	U	790	U	850	U	680	U	50	J	730	U
Chrysene/218-01-9	840	U	790	U	850	U	680	U	70	J	49	J

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY416/Soil		FY417/Soil		FY418/Soil		FY419/Soil		FY420/Soil		FY421/Soil	
Percent Solid	39		41		39		48		44		45	
Station No.	DS-SS-16		DS-SS-17		DS-SS-18		DS-SS-19		DS-SS-20		DS-SS-21	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)Fluoranthene/205-99-2	840	U	790	U	57	J	680	U	38	J	730	U
Benzo(k)Fluoranthene/207-08-9	840	U	790	U	850	U	680	U	40	J	730	U
Benzo(a)pyrene/50-32-8	840	U	790	U	850	U	680	U	740	U	730	U
Benzo(g,h,i)perylene/191-24-2	840	U	790	U	850	U	680	U	73	J	730	U
beta-BHC/319-85-7	4.3	U	4.1	U	22	U	3.5	UJ	3.9	UJ	3.8	UJ
Heptachlor Epoxide/1024-57-3	4.3	U	4.1	U	8.3	J	0.49	J	1.0	J	3.8	UJ
Endosulfan I/959-98-8	11	J	6.4	J	230		14	J	23	J	6.9	J
4,4'-DDE/72-55-9	2.3	J	3.0	J	42	U	6.8	UJ	7.5	UJ	7.3	UJ
Endrin/72-20-8	8.4	U	8.0	U	42	U	6.8	UJ	7.5	UJ	7.3	UJ
4,4'-DDD/72-54-8	8.4	U	8.0	U	14	J	1.1	J	2.4	J	7.3	UJ
Endrin Ketone/53494-70-5	8.4	U	8.0	U	42	U	6.8	UJ	7.5	UJ	7.3	UJ
gamma-Chlordane/5103-74-2	4.3	U	4.1	U	3.2	J	3.5	UJ	3.9	UJ	3.8	UJ
Aroclor-1248/12672-29-6	84	U	80	U	420	U	68	UJ	75	UJ	73	UJ
Aroclor-1254/11097-69-1	84	U	80	U	420	U	68	UJ	75	UJ	73	UJ
Aroclor-1260/11096-82-5	84	UJ	80	U	420	U	68	UJ	75	UJ	73	UJ

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY422/Soil		FY423/Soil		FY424/Soil		FY425/Soil		FY426/Soil		FY427/Soil	
Percent Solid	40		57		37		35		71		74	
Station No.	DS-SS-22		DS-SS-23		DS-SS-24		DS-SS-25		DS-SS-26		DS-SS-27	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	4	J	7	U	11	U	7	U	7	U	7	U
Acetone/67-64-1	230	J	18	U	160	J	290		31		63	
2-Butanone/78-93-3	54	J	18	U	45	J	87	J	12	J	18	
Carbon Disulfide/75-15-0	25	U	18	U	27	U	3	J	14	U	14	U
1,1,1-Trichloroethane/71-55-6	3	J	18	U	27	U	29	U	14	U	14	U
Trichloroethene/79-01-6	25	U	18	U	27	U	29	U	14	U	14	U
1,1,2-Trichloroethane/79-00-5	25	U	18	U	27	U	29	U	14	U	14	U
Benzene/71-43-2	25	U	18	U	27	U	29	U	14	U	2	J
Tetrachloroethene/127-18-4	25	UJ	18	U	27	U	29	U	14	U	14	U
1,1,2,2-Tetrachloroethane/79-34-5	25	UJ	18	U	27	U	29	U	14	U	14	U
Toluene/108-88-3	25	UJ	7	J	27	U	29	U	9	J	16	
Chlorobenzene/108-90-7	25	UJ	18	U	27	U	29	U	100		170	
Ethylbenzene/100-41-4	25	UJ	2	J	27	U	29	U	6	J	4	J
Xylene (total)/1330-20-7	25	UJ	8	J	27	U	29	U	8	J	15	
1,3-Dichlorobenzene/541-73-1	820	U	580	U	890	U	67	J	460	J	380	J
1,4-Dichlorobenzene/106-46-7	820	U	580	U	890	U	940	U	930		850	
1,2-Dichlorobenzene/95-50-1	820	U	580	U	890	U	940	U	37	J	27	J
Hexachloroethane/67-72-1	820	U	580	U	890	U	940	U	460	U	440	U
1,2,4-Trichlorobenzene/120-82-1	820	U	580	U	890	U	940	U	58	J	440	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY422/Soil		FY423/Soil		FY424/Soil		FY425/Soil		FY426/Soil		FY427/Soil	
Percent Solid	40		57		37		35		71		74	
Station No.	DS-SS-22		DS-SS-23		DS-SS-24		DS-SS-25		DS-SS-26		DS-SS-27	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	820	U	50	J	130	J	57	J	460	U	440	U
2-Methylnaphthalene/91-57-6	820	U	580	U	890	U	940	U	460	U	440	U
Hexachlorobutadiene/87-68-3	820	U	580	U	890	U	940	U	460	U	440	U
Diethylphthalate/84-66-2	820	U	580	U	890	U	940	U	460	U	440	U
Fluorene/86-73-7	820	U	580	U	54	J	51	J	460	U	440	U
N-Nitrosodiphenylamine/86-30-6	820	U	580	U	890	U	940	U	460	U	440	U
Hexachlorobenzene/118-74-1	820	U	580	U	890	U	940	U	10000	D	6400	D
Phenanthrene/85-01-8	51	J	580	U	150	J	180	J	180	J	140	J
Acenaphthene/83-32-9	820	U	580	U	890	U	940	U	460	U	440	U
Anthracene/120-12-7	820	U	580	U	890	U	60	J	460	U	440	U
Carbazole/86-74-8	820	U	580	U	890	U	940	U	460	U	440	U
Di-n-butylphthalate/84-74-2	820	U	580	U	890	U	940	U	460	U	440	U
Fluoranthene/206-44-0	820	U	580	U	83	J	200	J	96	J	58	J
Pyrene/129-00-0	820	U	580	U	84	J	490	J	130	J	74	J
Butylbenzylphthalate/85-68-7	820	U	580	U	890	U	940	U	460	U	440	U
bis(2-Ethylhexyl)phthalate/117-81-7	140	J	180	J	180	J	390	J	1600	J	66	J
Di-n-octylphthalate/117-84-0	820	U	580	U	890	U	940	U	460	U	440	U
Benzo(a)Anthracene/56-55-3	820	U	580	U	890	U	80	J	52	J	38	J
Chrysene/218-01-9	820	U	580	U	48	J	190	J	79	J	64	J

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY422/Soil		FY423/Soil		FY424/Soil		FY425/Soil		FY426/Soil		FY427/Soil	
Percent Solid	40		57		37		35		71		74	
Station No.	DS-SS-22		DS-SS-23		DS-SS-24		DS-SS-25		DS-SS-26		DS-SS-27	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)fluoranthene/205-99-2	820	U	580	U	890	U	62	J	86	J	55	J
Benzo(k)fluoranthene/207-08-9	820	U	580	U	890	U	940	U	460	U	440	U
Benzo(a)pyrene/50-32-8	820	U	580	U	890	U	57	J	64	J	47	J
Benzo(g,h,i)perylene/191-24-2	820	U	580	U	890	U	940	U	460	U	440	U
beta-BHC/319-85-7	4.2	U	3.0	U	4.6	U	4.9	U	120	UJ	110	UJ
Heptachlor Epoxide/1024-57-3	4.2	U	3.0	U	4.6	U	4.9	U	12	U	11	U
Endosulfan I/959-98-8	4.2	U	3.0	U	4.6	U	4.9	U	12	U	11	U
4,4'-DDE/72-55-9	8.2	U	5.8	U	8.9	U	9.4	U	23	U	22	U
Endrin/72-20-8	8.2	U	5.8	U	8.9	U	9.4	U	23	R	22	R
4,4'-DDD/72-54-8	8.2	U	5.8	U	8.9	U	9.4	U	23	U	22	U
Endrin Ketone/53494-70-5	8.2	U	5.8	U	8.9	U	9.4	U	23	U	22	U
gamma-Chlordane/5103-74-2	4.2	U	3.0	U	4.6	U	4.9	U	12	U	11	U
Aroclor-1248/12672-29-6	82	U	58	U	89	U	530		230	U	220	U
Aroclor-1254/11097-69-1	82	U	58	U	89	U	540	J	230	U	220	U
Aroclor-1260/11096-82-5	82	U	58	U	89	U	260		230	U	220	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY428/Soil		FY429/Soil		FY430/Soil		FY431/Soil		FY432/Soil		FY433/Soil	
Percent Solid	61		63		52		43		46		52	
Station No.	DS-SS-28		DS-SS-29		DS-SS-30		DS-SS-31		DS-SS-32		DS-SS-33	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Methylene Chloride/75-09-2	2600	U	8	U	15	J	3900	U	4200	U	1600	U
Acetone/67-64-1	14000	J	27		170	J	28000	U	26000	U	2300	U
2-Butanone/78-93-3	20000	U	16	U	38	J	28000	U	26000	U	2300	U
Carbon Disulfide/75-15-0	20000	U	16	U	96	U	28000	U	26000	U	2300	U
1,1,1-Trichloroethane/71-55-6	20000	U	16	U	96	U	28000	U	26000	U	2300	U
Trichloroethene/79-01-6	40000		16	U	96	U	36000		40000		2300	U
1,1,2-Trichloroethane/79-00-5	41000		16	U	96	U	28000	U	26000	U	2300	U
Benzene/71-43-2	20000	U	2	J	96	U	28000	U	26000	U	2300	U
Tetrachloroethene/127-18-4	220000		16	U	96	U	220000		210000		2300	U
1,1,2,2-Tetrachloroethane/79-34-5	33000		16	U	96	U	9900	J	8000	J	2300	U
Toluene/108-88-3	4400	J	15	J	84	J	28000	U	26000	U	2300	U
Chlorobenzene/108-90-7	20000	U	140		1600		28000	U	26000	U	2300	J
Ethylbenzene/100-41-4	20000	U	2	J	140		28000	U	26000	U	1200	J
Xylene (total)/1330-20-7	20000	U	9	J	110		28000	U	26000	U	2300	U
1,3-Dichlorobenzene/541-73-1	5400	J	850		410	J	8300	J	7200	J	4900	J
1,4-Dichlorobenzene/106-46-7	6100	J	600	J	1000		8300	J	7600	J	4700	J
1,2-Dichlorobenzene/95-50-1	3100	J	80	J	76	J	3600	J	3100	J	19000	U
Hexachloroethane	76000		520	U	410	U	100000		110000		19000	U
1,2,4-Trichlorobenzene/120-82-1	75000		2100	J	140	J	84000		81000		13000	J

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY428/Soil		FY429/Soil		FY430/Soil		FY431/Soil		FY432/Soil		FY433/Soil	
Percent Solid	61		63		52		43		46		52	
Station No.	DS-SS-28		DS-SS-29		DS-SS-30		DS-SS-31		DS-SS-32		DS-SS-33	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Naphthalene/91-20-3	50000		650		37	J	49000		46000		19000	U
2-Methylnaphthalene/91-57-6	12000	J	260	J	630	U	13000	J	12000	J	19000	U
Hexachlorobutadiene/87-68-3	10000000	D	260000	D	4800		11000000	D	12000000	D	1500000	D
Diethylphthalate/84-66-2	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Fluorene/86-73-7	16000	U	310	J	630	U	13000	J	22000	U	19000	U
N-Nitrosodiphenylamine/86-30-6	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Hexachlorobenzene/118-74-1	380000		12000		7300		470000		460000		120000	
Phenanthrene/85-01-8	250000		7800		190	J	340000		270000		30000	
Acenaphthene/83-32-9	2500	J	80	J	630	U	2300	J	22000	U	19000	U
Anthracene/120-12-7	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Carbazole/86-74-8	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Di-n-butylphthalate/84-74-2	1900	J	520	U	630	U	23000	U	22000	U	19000	U
Fluoranthene/206-44-0	5700	J	210	J	54	J	7500	J	6900	J	1300	J
Pyrene/129-00-0	6600	J	240	J	59	J	10000	J	7900	J	3000	J
Butylbenzylphthalate/85-68-7	16000	U	520	U	630	U	23000	U	22000	U	19000	U
bis(2-Ethylhexyl)phthalate/117-81-7	16000	U	630	J	5400		23000	U	22000	U	19000	U
Di-n-octylphthalate/117-84-0	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Benzo(a)Anthracene/56-55-3	1300	J	58	J	630	U	1500	J	1900	J	19000	U
Chrysene/218-01-9	2800	J	110	J	630	U	4000	J	2700	J	19000	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY428/Soil		FY429/Soil		FY430/Soil		FY431/Soil		FY432/Soil		FY433/Soil	
Percent Solid	61		63		52		43		46		52	
Station No.	DS-SS-28		DS-SS-29		DS-SS-30		DS-SS-31		DS-SS-32		DS-SS-33	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q
Benzo(b)fluoranthene/205-99-2	16000	U	81	J	630	U	23000	U	22000	U	19000	U
Benzo(k)fluoranthene/207-08-9	16000	U	520	U	630	U	23000	U	22000	U	19000	U
Benzo(a)pyrene/50-32-8	16000	U	40	J	630	U	23000	U	22000	U	19000	U
Benzo(g,h,i)perylene/191-24-2	16000	U	520	U	630	U	23000	U	22000	U	19000	U
beta-BHC/319-85-7	28000	UJ	27	UJ	16	UJ	4000	U	3700	U	3300	U
Heptachlor Epoxide/1024-57-3	2800	U	27	U	16	U	4000	U	3700	U	3300	U
Endosulfan I/959-98-8	2800	U	27	U	16	U	4000	U	3700	U	3300	U
4,4'-DDE/72-55-9	5400	U	52	U	32	U	7700	U	7200	U	6300	U
Endrin/72-20-8	5400	R	52	R	32	R	7700	R	7200	R	6300	R
4,4'-DDD/72-54-8	5400	U	52	U	32	U	7700	U	7200	U	6300	U
Endrin Ketone/53494-70-5	5400	U	52	U	32	U	7700	U	7200	U	6300	U
gamma-Chlordane/5103-74-2	2800	U	27	U	16	U	4000	U	3700	U	3300	U
Aroclor-1248/12672-29-6	54000	U	520	U	320	U	77000	U	72000	U	63000	U
Aroclor-1254/11097-69-1	54000	U	520	U	320	U	77000	U	72000	U	63000	U
Aroclor-1260/11096-82-5	54000	U	520	U	320	U	77000	U	72000	U	63000	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY434/Soil		FY435/Soil		FY436/Soil		FY437/Water		FY438/Water		FY443/Water	
Percent Solid	63		75		54		NA		NA		NA	
Station No.	DS-SS-34		DS-SS-35		DS-SS-36		DS-SW-02X		DS-SW-03		DS-ER-02	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/L	Q	ug/L	Q	ug/L	Q
Methylene Chloride/75-09-2	7	U	4	U	4	J	10	U	10	U	10	U
Acetone/67-64-1	16	U	13	U	24	J	10	U	10	U	10	U
2-Butanone/78-93-3	16	U	13	U	19	U	10	U	10	U	10	U
Carbon Disulfide/75-15-0	16	U	13	U	19	U	10	U	10	U	10	U
1,1,1-Trichloroethane/71-55-6	16	U	13	U	19	U	10	U	10	U	10	U
Trichloroethene/79-01-6	16	U	13	U	19	U	25		10	U	10	U
1,1,2-Trichloroethane/79-00-5	16	U	13	U	19	U	2	J	10	U	10	U
Benzene/71-43-2	16	U	13	U	19	U	10	U	10	U	10	UJ
Tetrachloroethene/127-18-4	6	J	13	U	19	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane/79-34-5	16	U	13	U	19	U	10	U	10	U	10	U
Toluene/108-88-3	4	J	13	U	19	U	7	J	10	U	10	UJ
Chlorobenzene/108-90-7	16	U	13	U	19	U	10	U	10	U	10	UJ
Ethylbenzene/100-41-4	16	U	13	U	19	U	8	J	10	U	10	UJ
Xylene (total)/1330-20-7	2	J	13	U	19	U	3	J	10	U	10	UJ
1,3-Dichlorobenzene/541-73-1	260000	U	440	U	610	U	10	UJ	10	U	10	U
1,4-Dichlorobenzene/106-46-7	260000	U	440	U	610	U	10	UJ	10	U	10	U
1,2-Dichlorobenzene/95-50-1	260000	U	440	U	610	U	10	UJ	10	U	10	U
Hexachloroethane/67-72-1	260000	U	440	U	610	U	10	U	10	U	10	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY434/Soil		FY435/Soil		FY436/Soil		FY437/Water		FY438/Water		FY443/Water	
Percent Solid	63		75		54		NA		NA		NA	
Station No.	DS-SS-34		DS-SS-35		DS-SS-36		DS-SW-02X		DS-SW-03		DS-ER-02	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/L	Q	ug/L	Q	ug/L	Q
1,2,4-Trichlorobenzene/120-82-1	260000	U	440	U	610	U	10	U	10	U	10	U
Naphthalene/91-20-3	260000	U	440	U	610	U	3	J	10	U	10	U
2-Methylnaphthalene/91-57-6	260000	U	440	U	610	U	3	J	10	U	10	U
Hexachlorobutadiene/87-68-3	4200000	D	190	J	610	U	74	D	10	U	10	U
Diethylphthalate/84-66-2	260000	U	440	U	610	U	10	U	10	U	0.5	J
Fluorene/86-73-7	260000	U	440	U	610	U	10	U	10	U	10	U
N-Nitrosodiphenylamine/86-30-6	260000	U	440	U	610	U	4	J	10	U	10	U
Hexachlorobenzene/118-74-1	250000	J	440	U	610	U	10	U	10	U	10	U
Phenanthrene/85-01-8	150000	J	38	J	85	J	10	U	10	U	10	U
Acenaphthylene/208-96-8	260000	U	440	U	610	U	10	U	10	U	10	U
Anthracene/120-12-7	260000	U	440	U	610	U	10	U	10	U	10	U
Carbazole/86-74-8	260000	U	440	U	610	U	10	U	10	U	10	U
Di-n-butylphthalate/84-74-2	260000	U	45	U	32	U	10	U	10	U	1	J
Fluoranthene/206-44-0	260000	U	440	U	610	U	10	U	10	U	10	U
Pyrene/129-00-0	260000	U	440	U	610	U	10	U	10	U	10	U
Butylbenzylphthalate/85-68-7	260000	U	440	U	610	U	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate/117-81-7	260000	U	38	J	610	U	10	U	10	U	10	U
Di-n-octylphthalate/117-84-0	260000	U	440	U	610	U	10	U	10	U	10	U
Benzo(a)anthracene/56-55-3	260000	U	440	U	610	U	10	U	10	U	10	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY434/Soil		FY435/Soil		FY436/Soil		FY437/Water		FY438/Water		FY443/Water	
Percent Solid	63		75		54		NA		NA		NA	
Station No.	DS-SS-34		DS-SS-35		DS-SS-36		DS-SW-02X		DS-SW-03		DS-ER-02	
Analyte/CAS Number	ug/Kg	Q	ug/Kg	Q	ug/Kg	Q	ug/L	Q	ug/L	Q	ug/L	Q
Chrysene/218-01-9	260000	U	440	U	610	U	10	U	10	U	10	U
Benzo(b)fluoranthene/205-99-2	260000	U	440	U	610	U	10	U	10	U	10	U
Benzo(k)fluoranthene/207-08-9	260000	U	440	U	610	U	10	U	10	U	10	U
Benzo(a)pyrene/50-32-8	260000	U	440	U	610	U	10	U	10	U	10	U
Benzo(g,h,i)perylene/191-24-2	260000	U	440	U	610	U	10	U	10	U	10	U
beta-BHC/319-85-7	2700	U	2.3	U	3.1	U	10	U	10	U	0.05	U
Heptachlor Epoxide/1024-57-3	2700	U	2.3	U	3.1	U	10	U	10	U	0.05	U
Endosulfan I/959-98-8	2700	U	2.3	U	3.1	U	0.7	U	2	U	0.05	U
4,4'-DDE/72-55-9	5200	U	4.4	U	6.1	U	10	U	10	U	0.1	U
Endrin/72-20-8	5200	R	4.4	U	6.1	U	10	U	10	U	0.1	U
4,4'-DDD/72-54-8	5200	U	4.4	U	6.1	U	10	U	10	U	0.1	U
Endrin Ketone/53494-70-5	5200	U	4.4	U	6.1	U	10	U	10	U	0.1	U
gamma-Chlordane/5103-74-2	2700	U	2.3	U	3.1	U	10	U	10	U	0.05	U
Aroclor-1248/12672-29-6	52000	U	44	U	61	U	0.050	UJ	0.050	U	1.0	U
Aroclor-1254/11097-69-1	52000	U	44	U	61	U	0.050	UJ	0.050	U	1.0	U
Aroclor-1260/11096-82-5	52000	U	44	U	61	U	0.050	UJ	0.050	U	1.0	U

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY444/Water									
Percent Solid	NA									
Station No.	DS-TB-01									
Analyte/CAS Number	ug/L	Q								
Methylene Chloride/75-09-2	10	U								
Acetone/67-64-1	10	U								
2-Butanone/78-93-3	10	U								
Carbon Disulfide/75-15-0	10	U								
1,1,1-Trichloroethane/71-55-6	10	U								
Trichloroethene/79-01-6	10	U								
1,1,2-Trichloroethane/79-00-5	10	U								
Benzene/71-43-2	10	UJ								
Tetrachloroethene/127-18-4	10	U								
1,1,2,2-Tetrachloroethane/79-34-5	10	U								
Toluene/108-88-3	10	UJ								
Chlorobenzene/108-90-7	10	UJ								
Ethylbenzene/100-41-4	10	UJ								
Xylene (total)/1330-20-7	10	UJ								
1,3-Dichlorobenzene/541-73-1	NA									
1,4-Dichlorobenzene/106-46-7	NA									
1,2-Dichlorobenzene/95-50-1	NA									
Hexachloroethane/67-72-1	NA									
1,2,4-Trichlorobenzene/120-82-1	NA									

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY444/Water															
Percent Solid	NA															
Station No.	DS-TB-01															
Analyte/CAS Number	ug/L	Q														
Naphthalene/91-20-3	NA															
2-Methylnaphthalene/91-57-6	NA															
Hexachlorobutadiene/87-68-3	NA															
Diethylphthalate/84-66-2	NA															
Fluorene/86-73-7	NA															
N-Nitrosodiphenylamine/86-30-6	NA															
Hexachlorobenzene/118-74-1	NA															
Phenanthrene/85-01-8	NA															
Acenaphthylene/208-96-8	NA															
Anthracene/120-12-7	NA															
Carbazole/86-74-8	NA															
Di-n-butylphthalate/84-74-2	NA															
Fluoranthene/206-44-0	NA															
Pyrene/129-00-0	NA															
Butylbenzylphthalate/85-68-7	NA															
bis(2-Ethylhexyl)phthalate/117-81-7	NA															
Di-n-octylphthalate/117-84-0	NA															
Benzo(a)anthracene/56-55-3	NA															
Chrysene/218-01-9	NA															

DEVIL'S SWAMP ORGANICS
ANALYTICAL DATA SUMMARY
TABLE B-1

Sample ID/Matrix	FY444/Water											
Percent Solid	NA											
Station No.	DS-TB-01											
Analyte/CAS Number	ug/L	Q										
Benzo(b)fluoranthene/205-99-2	NA											
Benzo(k)fluoranthene/207-08-9	NA											
Benzo(a)pyrene/50-32-8	NA											
Benzo(g,h,i)perylene/191-24-2	NA											
beta-BHC/319-85-7	NA											
Heptachlor Epoxide/1024-57-3	NA											
Endosulfan I/959-98-8	NA											
4,4'-DDE/72-55-9	NA											
Endrin/72-20-8	NA											
4,4'-DDD/72-54-8	NA											
Endrin Ketone/53494-70-5	NA											
gamma-Chlordane/5103-74-2	NA											
Aroclor-1248/12672-29-6	NA											
Aroclor-1254/11097-69-1	NA											
Aroclor-1260/11096-82-5	NA											

CAS	=	Chemical Abstract Service
D	=	Concentration exceeded calibration range of gas chromatograph/mass spectrometer (GC/MS)
DS	=	Devil's Swamp
ER	=	Equipment rinsate
J	=	Estimated concentration
mg/Kg	=	Milligram per kilogram
NA	=	Not applicable
Q	=	Qualifier
SS	=	Sediment sample
SW	=	Surface water sample
TB	=	Trip blank
U	=	Not detected
ug/Kg	=	Microgram per kilogram
ug/L	=	Microgram per liter

TABLE B-2
DEVIL'S SWAMP INORGANIC
ANALYTICAL DATA SUMMARY

DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sheet 1 of 6

Sample ID/Matrix	MFZ605/Water		MFZ607/Water		MFZ701/Soil		MFZ702/Soil		MFZ703/Soil		MFZ704/Soil		MFZ705/Water	
Percent Solid	NA		NA		45.2		47.9		48.2		54.8		NA	
Station No.	DS-SW-02		DS-SW-01		DS-SS-01		DS-SS-02		DS-SS-03		DS-SS-04		DS-ER-01	
Analyte/CAS Number	ug/L	Q	ug/L	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	ug/L	Q
Aluminum/7429-90-5	619	J	3480	J	20300		26500		33600		25000		100	U
Arsenic/7440-38-2	2.2	U	8.1	U	24.3		20.5	J	21.1		19.5		19.6	
Barium/7440-39-3	60.7		121		236		262		276		219		11.0	U
Beryllium/7440-41-7	1.0	U	1.0	U	1.6		2.3		2.4		2.0		1.0	U
Cadmium/7440-43-9	4.0	U	4.0	U	14.0		3.9		3.0		5.6		4.0	U
Calcium/7440-70-2	15400		21100		6180		9170		8910		6360		310	U
Chromium/7440-47-3	3.0	U	4.3		94.8		44.3		48.2		53.4		9.0	U
Cobalt/7440-48-4	5.0	U	5.0	U	10.6		12.1		10.8		11.7		7.0	U
Copper/7440-50-8	4.0	U	10	U	137		90.1		46.9		54.0		20.0	U
Iron/7439-89-6	1490	J	3280	J	26600		31000		33000		25100		29.6	
Lead/7439-92-1	3.6	U	9.2	J	23.9	J	24.9	J	30.5	J	24.2	J	3.2	J
Magnesium/7439-95-4	4780		6320		5160		8090		8690		6020		185	U
Manganese/7439-96-5	97.3		621		563		645		643		519		4.0	U
Mercury/7439-97-6	0.20	U	0.20	U	0.22	U	0.21	U	0.21	U	0.18	U	0.20	U
Nickel/7440-02-0	5.0	U	7.7	U	31.4		36.1		34.7		28.0		16.0	U
Potassium/7440-09-7	3290		7920		1700		3070		3590		2850		900	U
Selenium/7782-49-2	1.0	U	1.2		4.4	UJ	0.42	UJ	0.41	UJ	3.6	UJ	10.0	UJ
Silver/7440-22-4	4.0	U	4.0	U	8.4		2.9	U	2.9	U	2.7		7.0	U
Sodium/7440-23-5	33900		384000		665		539		536		621		330	U
Vanadium/7440-62-2	3.0	U	7.7		41.8		63.2		82.0		57.6		16.0	U
Zinc/7440-66-6	7.4	U	18.0	U	213		147		140		135		24.9	

DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sample ID/Matrix	MFZ706/Soil		MFZ707/Soil		MFZ708/Soil		MFZ709/Soil		MFZ710/Soil		MFZ711/Soil		MFZ712/Soil	
Percent Solid	64.4		38.6		47.6		56.0		49.8		45.8		49.6	
Station No.	DS-SS-06		DS-SS-05		DS-SS-08		DS-SS-09		DS-SS-10		DS-SS-11		DS-SS-12	
Analyte/CAS Number	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q
Aluminum/7429-90-5	17500		32500		29200		23300		32200		31700		21500	
Arsenic/7440-38-2	22.8		36.1		28.1		17.7		21.6		26.9		17.7	
Barium/7440-39-3	191		242		246		207		275		226		189	
Beryllium/7440-41-7	1.5	U	2.3		2.2		1.8		2.4		2.3		1.8	
Cadmium/7440-43-9	4.1		6.5		5.9		3.9		4.5		7.2		3.1	
Calcium/7440-70-2	6590		6010		5470		7530		5230		6530		7020	
Chromium/7440-47-3	52.3		45.0		59.8		32.4		43.4		50.8		30.4	
Cobalt/7440-48-4	10.1		15.8		13.3		12.0		14.0		20.1		11.4	
Copper/7440-50-8	37.6		70.3		37.1		30.0		35.5		51.1		23.2	
Iron/7439-89-6	20800		32900		29100		23300		35500		30000		22500	
Lead/7439-92-1	18.2	J	42.1	J	75.6	J	57.1	J	30.3	J	65.7	J	28.5	J
Magnesium/7439-95-4	5570		7400		5950		5800		6980		6800		5850	
Manganese/7439-96-5	426		561		498		581		583		501		495	
Mercury/7439-97-6	0.16	U	0.26	U	0.21	U	0.18	U	0.20	U	0.22	U	0.20	U
Nickel/7440-02-0	25.3		35.3		41.9		31.2		35.4		33.1		31.7	
Potassium/7440-09-7	1920		3690		2850		2620		3420		2790		2800	
Selenium/7782-49-2	3.1	UJ	5.2	UJ	4.2	UJ	3.6	UJ	4.0	UJ	4.4	UJ	4.0	UJ
Silver/7440-22-4	4.2		11.0		2.9	U	2.5	U	4.6		3.1	U	8.0	
Sodium/7440-23-5	444		1050		920		479		867		564		455	
Vanadium/7440-62-2	45.6		76.0		64.3		52.0		72.5		65.8		53.0	
Zinc/7440-66-6	115		157		171		123		143		163		113	

DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sample ID/Matrix	MFZ713/Soil		MFZ714/Soil		MFZ715/Soil		MFZ716/Soil		MFZ717/Soil		MFZ718/Soil		MFZ719/Soil	
Percent Solid	64.3		39.4		40.0		39.6		39.7		42.6		48.7	
Station No.	DS-SS-13		DS-SS-14		DS-SS-15		DS-SS-16		DS-SS-17		DS-SS-18		DS-SS-19	
Analyte/CAS Number	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q
Aluminum/7429-90-5	10300		27300		26200		30500		30700		27300	J	17100	J
Arsenic/7440-38-2	12.9		27.1		25.2		49.4		42.3		16.0		13.9	J
Barium/7440-39-3	116		254		214		344		287		241		208	
Beryllium/7440-41-7	0.94	U	2.3		2.3		1.9		2.0		1.8		1.5	
Cadmium/7440-43-9	1.5		7.5		7.3		38.0		31.7		15.7		12.8	
Calcium/7440-70-2	5830		5930		5690		3850		4010		3420		3280	
Chromium/7440-47-3	16.5		79.6		36.5		48.8		37.9		32.9	J	22.1	J
Cobalt/7440-48-4	7.3		12.8		13.8		14.8		21.3		14.7		10.3	
Copper/7440-50-8	14.0		34.4		37.0		66.4		59.0		41.5		38.8	
Iron/7439-89-6	15800		29500		22900		26800		28100		25800		22000	
Lead/7439-92-1	14.9	J	84.3	J	98.5	J	172		207		112		122	
Magnesium/7439-95-4	4130		5690		4970		3650		3890		3830		2950	
Manganese/7439-96-5	387		585		385		797		683		702		603	
Mercury/7439-97-6	0.16	U	0.25	U	0.25	U	0.25	U	0.25	U	0.23	U	0.21	U
Nickel/7440-02-0	17.6		37.9		36.4		26.1		35.7		27.4		21.6	
Potassium/7440-09-7	1050		2470		2160		2060		2280		2520		1430	
Selenium/7782-49-2	3.1	UJ	5.1	UJ	5.0	UJ	0.86	J	0.71	J	0.66	J	0.70	J
Silver/7440-22-4	5.5		11.8		9.1		8.6		9.7		9.8		7.7	
Sodium/7440-23-5	244	U	822		932		528		535		426		534	
Vanadium/7440-62-2	27.0		62.5		56.1		53.2		58.0		58.1		42.0	
Zinc/7440-66-6	74.0		178		158		285		290		157		131	

DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sample ID/Matrix	MFZ720/Soil		MFZ721/Soil		MFZ722/Soil		MFZ723/Soil		MFZ724/Soil		MFZ725/Soil		MFZ726/Soil	
Percent Solid	45.5		46.1		57.7		57.7		40.0		33.6		71.0	
Station No.	DS-SS-20		DS-SS-21		DS-SS-22		DS-SS-23		DS-SS-24		DS-SS-25		DS-SS-26	
Analyte/CAS Number	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	ug/L	Q
Aluminum/7429-90-5	23400		26900		18600		27600		17900		27200		4280	
Arsenic/7440-38-2	24.8		22.6		27.1		5.9		20.8		26.4		10.7	
Barium/7440-39-3	274		304		218		278		224		259		66.9	
Beryllium/7440-41-7	1.5		2.0		1.1		2.1		1.3		1.7		0.28	
Cadmium/7440-43-9	36.1		23.3		17.0		0.89	J	10.7		7.7		8.7	
Calcium/7440-70-2	3130		3120		5000	J	3920	J	3150	J	4200	J	1030	J
Chromium/7440-47-3	29.6		36.6		23.6		30.6		22.7		32.1		6.2	
Cobalt/7440-48-4	13.9		13.7		17.4		15.6		15.4		27.6		14.0	
Copper/7440-50-8	31.6		31.2		26.4		27.4		26.2		46.5		9.8	
Iron/7439-89-6	23100		22500		21200		31400		19500		26600		5280	
Lead/7439-92-1	195		219		172		14.0		182		137		64.1	
Magnesium/7439-95-4	2830		3130		3600		5660		2370		3460		623	
Manganese/7439-96-5	597		454		593		675		491		450		172	
Mercury/7439-97-6	0.22	U	0.22	U	0.16	U	0.15	U	0.19	U	0.26	U	0.10	U
Nickel/7440-02-0	21.5		24.1		21.2		31.2		21.0		31.5		5.7	
Potassium/7440-09-7	1850		2180		1510		3360		1010		1760		318	
Selenium/7782-49-2	0.92	J	0.43	UJ	3.9	R	2.6	R	4.2	R	4.8	R	0.23	R
Silver/7440-22-4	5.6		5.7		1.2	U	0.81	U	1.2	U	1.4	U	0.70	U
Sodium/7440-23-5	392		500		246		332		465		833		111	
Vanadium/7440-62-2	49.5		55.1		33.5		52.2		31.0		47.0		10.0	
Zinc/7440-66-6	164		154		173	J	108	J	148	J	167	J	69.9	J

DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sample ID/Matrix	MFZ727/Soil		MFZ728/Soil		MFZ729/Soil		MFZ730/Soil		MFZ731/Soil		MFZ732/Soil		MFZ733/Soil	
Percent Solid	69.7		60.1		64.1		61.9		52.4		49.7		57.6	
Station No.	DS-SS-27		DS-SS-28		DS-SS-29		DS-SS-30		DS-SS-31		DS-SS-32		DS-SS-33	
Analyte/CAS Number	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q
Aluminum/7429-90-5	4450		8590		10500		12100		9990		10900		8000	
Arsenic/7440-38-2	15.1		10.2		8.2		4.3		21.7		21.6		7.6	
Barium/7440-39-3	71.8		102		127		148		141		166		143	
Beryllium/7440-41-7	0.33		0.56		0.82		0.90		0.78		0.58		0.58	
Cadmium/7440-43-9	11.4		10.3		3.0		1.0		43.9		62.3		9.9	
Calcium/7440-70-2	1070	J	999	J	1650	J	2610	J	1600	J	1970	J	1580	J
Chromium/7440-47-3	7.2		11.5		13.2		14.8		36.0		15.9		10.6	
Cobalt/7440-48-4	17.4		11.4		15.2		8.8		30.7		41.3		8.8	
Copper/7440-50-8	11.9		15.4		10.8		11.6		31.6		30.9		11.1	
Iron/7439-89-6	5410		7950		12000		11900		10700		11500		9170	
Lead/7439-92-1	73.0		168		30.0		24.9		246		212		119	
Magnesium/7439-95-4	640		936		1600		1870		1330		1420		1100	
Manganese/7439-96-5	179		225		436		322		353		424		396	
Mercury/7439-97-6	0.11	U	0.14	U	0.12	U	0.13	U	0.17	U	0.15	U	0.14	U
Nickel/7440-02-0	10.2		7.9		10.4		10.9		22.6		17.7		10.4	
Potassium/7440-09-7	343		591		977		980		750		882		811	
Selenium/7782-49-2	2.2	R	2.5	R	2.8	R	2.6	R	3.3	R	3.4	R	2.8	R
Silver/7440-22-4	0.67	U	0.85	U	0.83	U	0.79	U	0.92	U	1.1	U	0.90	U
Sodium/7440-23-5	820		143		161		140		185		213		161	
Vanadium/7440-62-2	9.7		16.5		22.6		23.7		20.5		25.6		20.2	
Zinc/7440-66-6	102	J	80.9	J	81.6	J	43.2	J	207	J	271	J	52.4	J

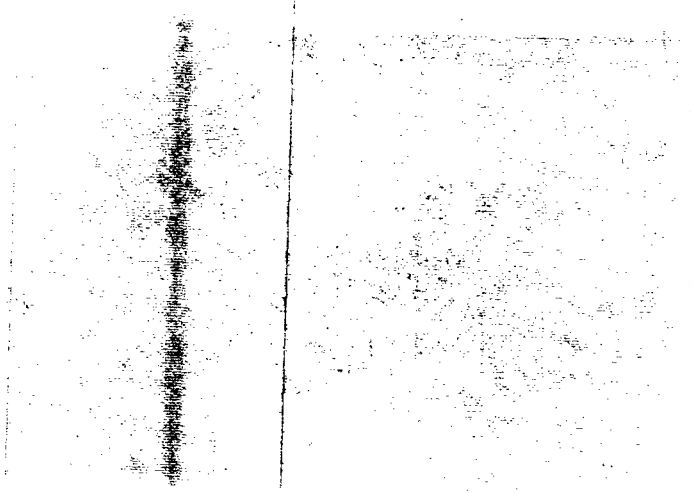
DEVIL'S SWAMP
ANALYTICAL DATA SUMMARY
TABLE B-2

Sheet 6 of 6

Sample ID/Matrix	MFZ734/Soil		MFZ735/Soil		MFZ736/Soil		MFZ737/Water		MFZ738/Water		MFZ743/Water		MFZ801/Soil	
Percent Solid	74.9		71.6		69.7		NA		NA		NA		41.9	
Station No.	DS-SS-34		DS-SS-35		DS-SS-36		DS-SW-02X		DS-SW-03		DS-ER-02		DS-SS-07	
Analyte/CAS Number	mg/Kg	Q	mg/Kg	Q	mg/Kg	Q	ug/L	Q	ug/L	Q	mg/Kg	Q	mg/Kg	Q
Aluminum/7429-90-5	3550		3540		14200		348		885		37.2	U	20200	
Arsenic/7440-38-2	3.8		4.2		2.2	J	3.0	UJ	3.0	U	1.8	U	26.3	
Barium/7440-39-3	44.7		105		168		69.6		68.6		2.7	U	205	
Beryllium/7440-41-7	0.23	U	0.27	U	1.2		1.0	U	1.0	U	1.0	U	1.7	
Cadmium/7440-43-9	1.6		33.3		0.60	U	3.0	U	3.0	U	2.2	U	5.1	
Calcium/7440-70-2	575	J	771	J	5370	J	17700		16400		221	U	6510	
Chromium/7440-47-3	5.3		13.4		18.7		8.0	U	8.0	U	2.9	U	29.0	
Cobalt/7440-48-4	1.9	U	4.1		12.3		7.0	U	7.0	U	8.3	U	15.6	
Copper/7440-50-8	3.8		4.7		16.5		9.5		7.2		6.4	U	44.1	
Iron/7439-89-6	3810		4560		18700		855		1870		42.7	U	22500	
Lead/7439-92-1	40.6		310		28.7		2.0	U	10.2	J	1.1	U	78.8	J
Magnesium/7439-95-4	443		481		4670		5060		5030		64.2	U	4900	
Manganese/7439-96-5	105		148		400		981		1590		1.1	U	509	
Mercury/7439-97-6	0.09	U	0.19		0.13	U	25.0	J	4.7	J	2.2		0.24	U
Nickel/7440-02-0	3.7		3.3		21.0		7.0	U	7.0	U	10.6	U	39.3	
Potassium/7440-09-7	356		405		2220		4520	J	4110	J	517	U	1620	
Selenium/7782-49-2	0.24	R	0.23	R	2.5	R	1.1	UJ	1.2	UJ	0.90	U	4.8	U
Silver/7440-22-4	0.61	U	0.73	U	0.73	U	5.0	U	5.0	U	2.7	U	6.5	
Sodium/7440-23-5	93.1		83.5		151		38300		38500		387	U	659	
Vanadium/7440-62-2	8.6		9.3		31.9		6.0	U	6.0	U	4.8	U	45.2	
Zinc/7440-66-6	24.3	J	122	J	69.6	J	19.0	U	24.0	U	7.8	U	151	

CAS	=	Chemical Abstract Service
DS	=	Devil's Swamp
ER	=	Equipment rinsate
J	=	Estimated concentration
mg/Kg	=	Milligram per kilogram
NA	=	Not applicable
R	=	Results unusable because quality control measurements grossly outside control limits
Q	=	Qualifier
SS	=	Sediment sample
SW	=	Surface water sample
TB	=	Trip blank
U	=	Not detected
ug/Kg	=	Microgram per kilogram
ug/L	=	Microgram per liter

APPENDIX C
CONTRACT LABORATORY PROGRAM (CLP) DOCUMENTATION



ANALYTICAL DATA SUMMARY

DEVIL'S SWAMP - EWELL PROPERTY
(LAD981155872)
EXPANDED SITE INSPECTION

October 1992

SEDIMENT SAMPLES

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY401

Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ087

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 48 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	51	B
67-64-1	Acetone	140	B
75-15-0	Carbon Disulfide	19	U
75-35-4	1,1-Dichloroethene	19	U
75-34-3	1,1-Dichloroethane	19	U
540-59-0	1,2-Dichloroethene (total)	19	U
67-66-3	Chloroform	19	U
107-06-2	1,2-Dichloroethane	19	U
78-93-3	2-Butanone	17	J
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
75-27-4	Bromodichloromethane	19	U
78-87-5	1,2-Dichloropropane	19	U
10061-02-6	cis-1,3-Dichloropropene	19	U
79-01-6	Trichloroethene	19	U
124-48-1	Dibromochloromethane	19	U
79-00-5	1,1,2-Trichloroethane	19	U
71-43-2	Benzene	19	U
10061-01-5	trans-1,3-Dichloropropene	19	U
75-25-2	Bromoform	19	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
108-88-3	Toluene	19	U
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
1330-20-7	Xylene (total)	19	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY401

b Name: RECRA ENVIRON Contract: 68D20035

ab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ087

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 48 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.28	350	BJN
2.	67630	2-Propanol	8.61	27	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY401

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG870

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl)Ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	630	U
106-46-7	1,4-Dichlorobenzene	110	J
95-50-1	1,2-Dichlorobenzene	380	J
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-Di-n-Propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy)Methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	630	U
91-20-3	Naphthalene	56	J
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	630	U
59-50-7	4-Chloro-3-Methylphenol	630	U
91-57-6	2-Methylnaphthalene	110	J
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethyl Phthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	630	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY401

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

Sample wt/vol: 30.2 4C (g/mL) G Lab File ID: BG870

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	630	U
121-14-2	2,4-Dinitrotoluene	630	U
84-66-2	Diethylphthalate	630	U
7005-72-3	4-Chlorophenyl-phenylether	630	U
86-73-7	Fluorene	70	J
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	150	J
101-55-3	4-Bromophenyl-phenylether	630	U
118-74-1	Hexachlorobenzene	630	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	440	J
120-12-7	Anthracene	65	J
86-74-8	Carbazole	75	J
84-74-2	Di-n-Butylphthalate	630	U
206-44-0	Fluoranthene	60	J
129-00-0	Pyrene	110	J
85-68-7	Butylbenzylphthalate	350	J
91-94-1	3,3'-Dichlorobenzidine	630	U
56-55-3	Benzo(a)Anthracene	630	U
218-01-9	Chrysene	630	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4900	✓
117-84-0	Di-n-Octyl Phthalate	630	U
205-99-2	Benzo(b)Fluoranthene	630	U
207-08-9	Benzo(k)Fluoranthene	630	U
50-32-8	Benzo(a)Pyrene	630	U
193-39-5	Indeno(1,2,3-cd)Pyrene	630	U
53-70-3	Dibenz(a,h)Anthracene	630	U
191-24-2	Benzo(g,h,i)Perylene	630	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY401

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG870

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.6

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.87	48000	ABJN
2.		UNKNOWN	7.02	2000	BJ
3.		UNKNOWN C9H12 MW120	7.17	1800	J
4.	4436-75-3	3-Hexene-2,5-dione	7.61	1700	BJN
5.		UNKNOWN DIETHYLBENZENE	9.43	9200	J
6.		UNKNOWN DIETHYLBENZENE	9.55	5700	J
7.		UNKNOWN	11.68	1200	J
8.		UNKNOWN TRIETHYLBENZENE	12.26	1800	J
9.		UNKNOWN	14.15	1900	J
10.		UNKNOWN	17.80	4100	J
11.		UNKNOWN	18.86	3200	J
12.		UNKNOWN	19.00	3800	J
13.		UNKNOWN	19.08	5400	J
14.		UNKNOWN	19.16	4100	J
15.		UNKNOWN	19.24	2900	J
16.		UNKNOWN	19.32	2900	J
17.		UNKNOWN	19.47	2800	J
18.		UNKNOWN	19.56	2900	J
19.		UNKNOWN	19.61	2500	J
20.	10544-50-0	Sulfur, mol (S*)	19.68	730	JN
21.		UNKNOWN MW242	22.98	2800	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY401

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004728

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

% Moisture: 48 decanted: (Y/N) N Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.6 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.3	U
319-85-7	beta-BHC	3.3	U
319-86-8	delta-BHC	3.3	U
58-89-9	gamma-BHC (Lindane)	3.3	U
76-44-8	Heptachlor	3.3	U
309-00-2	Aldrin	3.3	U
1024-57-3	Heptachlor epoxide	3.3	U
959-98-8	Endosulfan I	3.3	U
60-57-1	Dieldrin	6.3	U
72-55-9	4,4'-DDE	6.3	U
72-20-8	Endrin	6.3	U
33213-65-9	Endosulfan II	6.3	U
72-54-8	4,4'-DDD	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
50-29-3	4,4'-DDT	6.3	U
72-43-5	Methoxychlor	33	U
53494-70-5	Endrin ketone	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
5103-71-9	alpha-Chlordane	3.3	U
5103-74-2	gamma-Chlordane	3.3	U
8001-35-2	Toxaphene	330	U
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	52	JP
11097-69-1	Aroclor-1254	91	P
11096-82-5	Aroclor-1260	63	U

140

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ701

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5327S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 45.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20300			P
7440-36-0	Antimony	17.7	U		P
7440-38-2	Arsenic	24.3			F
7440-39-3	Barium	236			P
7440-41-7	Beryllium	1.6	B		P
7440-43-9	Cadmium	14.0			P
7440-70-2	Calcium	6180			P
7440-47-3	Chromium	94.8			P
7440-48-4	Cobalt	10.6	B		P
7440-50-8	Copper	137			P
7439-89-6	Iron	26600			P
7439-92-1	Lead	23.9		N	F
7439-95-4	Magnesium	5160			P
7439-96-5	Manganese	563			P
7439-97-6	Mercury	0.22	U		CV
7440-02-0	Nickel	31.4			P
7440-09-7	Potassium	1700	B		A
7782-49-2	Selenium	4.4	U	E	F
7440-22-4	Silver	8.4			P
7440-23-5	Sodium	665	B		P
7440-28-0	Thallium	1.3	U	WN	F
7440-62-2	Vanadium	41.8			P
7440-66-6	Zinc	213			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY402

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FG076

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 50 Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	32	B
67-64-1	Acetone	160	
75-15-0	Carbon Disulfide	20	U
75-35-4	1,1-Dichloroethene	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-02-6	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	20	U
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-01-5	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
1330-20-7	Xylene (total)	20	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY402

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FG076

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 50 Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	28.37	24	J
2.		UNKNOWN DIETHYL BENZENE ISOM	30.18	33	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY402

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG873

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	650	U
111-44-4	bis(2-Chloroethyl)Ether	650	U
95-57-8	2-Chlorophenol	650	U
541-73-1	1,3-Dichlorobenzene	650	U
106-46-7	1,4-Dichlorobenzene	650	U
95-50-1	1,2-Dichlorobenzene	650	U
95-48-7	2-Methylphenol	650	U
108-60-1	2,2'-oxybis(1-Chloropropane)	650	U
106-44-5	4-Methylphenol	650	U
621-64-7	N-Nitroso-Di-n-Propylamine	650	U
67-72-1	Hexachloroethane	650	U
98-95-3	Nitrobenzene	650	U
78-59-1	Isophorone	650	U
88-75-5	2-Nitrophenol	650	U
105-67-9	2,4-Dimethylphenol	650	U
111-91-1	bis(2-Chloroethoxy)Methane	650	U
120-83-2	2,4-Dichlorophenol	650	U
120-82-1	1,2,4-Trichlorobenzene	650	U
91-20-3	Naphthalene	650	U
106-47-8	4-Chloroaniline	650	U
87-68-3	Hexachlorobutadiene	650	U
59-50-7	4-Chloro-3-Methylphenol	650	U
91-57-6	2-Methylnaphthalene	650	U
77-47-4	Hexachlorocyclopentadiene	650	U
88-06-2	2,4,6-Trichlorophenol	650	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	650	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	650	U
208-96-8	Acenaphthylene	650	U
606-20-2	2,6-Dinitrotoluene	650	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	650	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY402

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG873

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	650	U
121-14-2	2,4-Dinitrotoluene	650	U
84-66-2	Diethylphthalate	650	U
7005-72-3	4-Chlorophenyl-phenylether	650	U
86-73-7	Fluorene	650	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	650	U
101-55-3	4-Bromophenyl-phenylether	650	U
118-74-1	Hexachlorobenzene	650	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	650	U
120-12-7	Anthracene	650	U
86-74-8	Carbazole	650	U
84-74-2	Di-n-Butylphthalate	650	U
206-44-0	Fluoranthene	650	U
129-00-0	Pyrene	650	U
85-68-7	Butylbenzylphthalate	650	U
91-94-1	3,3'-Dichlorobenzidine	650	U
56-55-3	Benzo(a)Anthracene	650	U
218-01-9	Chrysene	650	U
117-81-7	bis(2-Ethylhexyl)Phthalate	330	J
117-84-0	Di-n-Octyl Phthalate	650	U
205-99-2	Benzo(b)Fluoranthene	650	U
207-08-9	Benzo(k)Fluoranthene	650	U
50-32-8	Benzo(a)Pyrene	650	U
193-39-5	Indeno(1,2,3-cd)Pyrene	650	U
53-70-3	Dibenz(a,h)Anthracene	650	U
191-24-2	Benzo(g,h,i)Perylene	650	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY402

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG873

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 50 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.3

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.85	56000	ABJN
2.		UNKNOWN C9H20 MW128	5.89	430	BJ
3.		UNKNOWN	5.99	630	J
4.	2216-33-3	Octane, 3-methyl-	6.03	430	JNB
5.		UNKNOWN	7.01	2200	J
6.	4436-75-3	3-Hexene-2,5-dione	7.59	1600	BJN
7.		UNKNOWN	8.29	330	J
8.		UNKNOWN	8.34	730	J
9.		UNKNOWN	8.67	360	J
10.		UNKNOWN	9.44	1400	J
11.		UNKNOWN MW218	17.25	230	J
12.		UNKNOWN HYDROCARBON	17.94	260	J
13.		UNKNOWN HYDROCARBON	18.62	360	J
14.		UNKNOWN	18.82	330	J
15.	604-88-6	Benzene, hexaethyl-	18.92	200	JN
16.		UNKNOWN C14H12 MW180	19.19	260	J
17.		UNKNOWN HYDROCARBON	19.82	200	J
18.		UNKNOWN HYDROCARBON	26.45	300	J
19.		UNKNOWN	27.26	920	J
20.		UNKNOWN HYDROCARBON C29H60	29.53	820	J
21.		UNKNOWN MW326	34.94	660	J

4.10

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY402

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004729

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

% Moisture: 50 decanted: (Y/N) N Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.4	U
319-85-7	beta-BHC	3.4	U
319-86-8	delta-BHC	3.4	U
58-89-9	gamma-BHC (Lindane)	3.4	U
76-44-8	Heptachlor	3.4	U
309-00-2	Aldrin	3.4	U
1024-57-3	Heptachlor epoxide	3.4	U
959-98-8	Endosulfan I	3.4	U
60-57-1	Dieldrin	6.6	U
72-55-9	4,4'-DDE	6.6	U
72-20-8	Endrin	6.6	U
33213-65-9	Endosulfan II	6.6	U
72-54-8	4,4'-DDD	6.6	U
1031-07-8	Endosulfan sulfate	6.6	U
50-29-3	4,4'-DDT	6.6	U
72-43-5	Methoxychlor	34	U
53494-70-5	Endrin ketone	6.6	U
7421-93-4	Endrin aldehyde	6.6	U
5103-71-9	alpha-Chlordane	3.4	U
5103-74-2	gamma-Chlordane	3.4	U
8001-35-2	Toxaphene	340	U
12674-11-2	Aroclor-1016	66	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	66	U
53469-21-9	Aroclor-1242	66	U
12672-29-6	Aroclor-1248	66	U
11097-69-1	Aroclor-1254	66	U
11096-82-5	Aroclor-1260	66	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ702

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5328S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 47.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26500			P
7440-36-0	Antimony	16.7	U		P
7440-38-2	Arsenic	20.5		+	F
7440-39-3	Barium	262			P
7440-41-7	Beryllium	2.3			P
7440-43-9	Cadmium	3.9			P
7440-70-2	Calcium	9170			P
7440-47-3	Chromium	44.3			P
7440-48-4	Cobalt	12.1	B		P
7440-50-8	Copper	90.1			P
7439-89-6	Iron	31000			P
7439-92-1	Lead	24.9		N	F
7439-95-4	Magnesium	8090			P
7439-96-5	Manganese	645			P
7439-97-6	Mercury	0.21	U		CV
7440-02-0	Nickel	36.1			P
7440-09-7	Potassium	3070			A
7782-49-2	Selenium	0.42	U	W	F
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium	539	B		P
7440-28-0	Thallium	1.3	U	WN	F
7440-62-2	Vanadium	63.2			P
7440-66-6	Zinc	147			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: CLEAR

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY403

Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ088

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 51 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	65	B
67-64-1	Acetone	250	B
75-15-0	Carbon Disulfide	20	U
75-35-4	1,1-Dichloroethene	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
78-93-3	2-Butanone	22	
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
75-27-4	Bromodichloromethane	20	U
78-87-5	1,2-Dichloropropane	20	U
10061-02-6	cis-1,3-Dichloropropene	20	U
79-01-6	Trichloroethene	20	U
124-48-1	Dibromochloromethane	20	U
79-00-5	1,1,2-Trichloroethane	20	U
71-43-2	Benzene	20	U
10061-01-5	trans-1,3-Dichloropropene	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-88-3	Toluene	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
1330-20-7	Xylene (total)	20	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY403

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ088

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 51 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon Dioxide	1.23	390	BJN
2.	67630	2-Propanol	8.60	22	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY403

Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DG528

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 51 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	670	U
111-44-4	bis(2-Chloroethyl)Ether	670	U
95-57-8	2-Chlorophenol	670	U
541-73-1	1,3-Dichlorobenzene	670	U
106-46-7	1,4-Dichlorobenzene	670	U
95-50-1	1,2-Dichlorobenzene	43	J
95-48-7	2-Methylphenol	670	U
108-60-1	2,2'-oxybis(1-Chloropropane)	670	U
106-44-5	4-Methylphenol	670	U
621-64-7	N-Nitroso-Di-n-Propylamine	670	U
67-72-1	Hexachloroethane	670	U
98-95-3	Nitrobenzene	670	U
78-59-1	Isophorone	670	U
88-75-5	2-Nitrophenol	670	U
105-67-9	2,4-Dimethylphenol	670	U
111-91-1	bis(2-Chloroethoxy)Methane	670	U
120-83-2	2,4-Dichlorophenol	670	U
120-82-1	1,2,4-Trichlorobenzene	670	U
91-20-3	Naphthalene	670	U
106-47-8	4-Chloroaniline	670	U
87-68-3	Hexachlorobutadiene	670	U
59-50-7	4-Chloro-3-Methylphenol	670	U
91-57-6	2-Methylnaphthalene	670	U
77-47-4	Hexachlorocyclopentadiene	670	U
88-06-2	2,4,6-Trichlorophenol	670	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	670	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	670	U
208-96-8	Acenaphthylene	670	U
606-20-2	2,6-Dinitrotoluene	670	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	670	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY403

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DG528

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 51 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	670	U
121-14-2	2,4-Dinitrotoluene	670	U
84-66-2	Diethylphthalate	670	U
7005-72-3	4-Chlorophenyl-phenylether	670	U
86-73-7	Fluorene	670	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	670	U
101-55-3	4-Bromophenyl-phenylether	670	U
118-74-1	Hexachlorobenzene	670	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	81	J
120-12-7	Anthracene	670	U
86-74-8	Carbazole	670	U
84-74-2	Di-n-Butylphthalate	670	U
206-44-0	Fluoranthene	670	U
129-00-0	Pyrene	42	J
85-68-7	Butylbenzylphthalate	670	U
91-94-1	3,3'-Dichlorobenzidine	670	U
56-55-3	Benzo(a)Anthracene	670	U
218-01-9	Chrysene	670	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1000	
117-84-0	Di-n-Octyl Phthalate	670	U
205-99-2	Benzo(b)Fluoranthene	670	U
207-08-9	Benzo(k)Fluoranthene	670	U
50-32-8	Benzo(a)Pyrene	670	U
193-39-5	Indeno(1,2,3-cd)Pyrene	670	U
53-70-3	Dibenz(a,h)Anthracene	670	U
191-24-2	Benzo(g,h,i)Perylene	670	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY403

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DG528

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 51 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON MW128 C9	7.49	470	BJ
2.	2216333	Octane, 3-methyl-	7.65	540	BJN
3.		UNKNOWN	8.67	2200	BJ
4.	4436753	3-Hexene-2,5-dione	9.26	1500	BJN
5.		UNKNOWN	10.03	1300	J
6.		UNKNOWN	10.41	440	BJ
7.		UNKNOWN	11.24	3200	J
8.		UNKNOWN Diethylbenzene MW134	11.32	300	J
9.		UNKNOWN	15.16	240	J
10.		UNKNOWN	19.26	470	J
11.		UNKNOWN	19.79	370	J
12.		UNKNOWN HYDROCARBON	19.89	300	J
13.		UNKNOWN	20.47	1200	J
14.		UNKNOWN	20.90	510	J
15.		UNKNOWN	20.99	340	J
16.		UNKNOWN	21.06	440	J
17.		UNKNOWN	21.14	340	J
18.		UNKNOWN MW180 C14H12	21.30	610	J
19.		UNKNOWN	21.56	440	J
20.		UNKNOWN HYDROCARBON	21.81	470	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY403

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY403

Matrix: (soil/water) SOIL Lab Sample ID: BS004730

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

% Moisture: 51 decanted: (Y/N) N Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.5	U
319-85-7	beta-BHC	0.82	JP
319-86-8	delta-BHC	3.5	U
58-89-9	gamma-BHC (Lindane)	3.5	U
76-44-8	Heptachlor	3.5	U
309-00-2	Aldrin	3.5	U
1024-57-3	Heptachlor epoxide	3.5	U
959-98-8	Endosulfan I	3.5	U
60-57-1	Dieldrin	6.7	U
72-55-9	4,4'-DDE	6.7	U
72-20-8	Endrin	6.7	U
33213-65-9	Endosulfan II	6.7	U
72-54-8	4,4'-DDD	6.7	U
1031-07-8	Endosulfan sulfate	6.7	U
50-29-3	4,4'-DDT	6.7	U
72-43-5	Methoxychlor	35	U
53494-70-5	Endrin ketone	6.7	U
7421-93-4	Endrin aldehyde	6.7	U
5103-71-9	alpha-Chlordane	3.5	U
5103-74-2	gamma-Chlordane	3.5	U
8001-35-2	Toxaphene	350	U
12674-11-2	Aroclor-1016	67	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	67	U
53469-21-9	Aroclor-1242	67	U
12672-29-6	Aroclor-1248	67	U
11097-69-1	Aroclor-1254	26	JP
11096-82-5	Aroclor-1260	67	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ703

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5329S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 48.2

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	33600			P
7440-36-0	Antimony	16.6	U		P
7440-38-2	Arsenic	21.1		S	F
7440-39-3	Barium	276			P
7440-41-7	Beryllium	2.4			P
7440-43-9	Cadmium	3.0			P
7440-70-2	Calcium	8910			P
7440-47-3	Chromium	48.2			P
7440-48-4	Cobalt	10.8	B		P
7440-50-8	Copper	46.9			P
7439-89-6	Iron	33000			P
7439-92-1	Lead	30.5		N	F
7439-95-4	Magnesium	8690			P
7439-96-5	Manganese	643			P
7439-97-6	Mercury	0.21	U		CV
7440-02-0	Nickel	34.7			P
7440-09-7	Potassium	3590			A
7782-49-2	Selenium	0.41	U	MW	F
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium	536	B		P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	82.0			P
7440-66-6	Zinc	140			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: CLEAR

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY404

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FG072

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 44 Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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	12	BJ
67-64-1	Acetone	88	
75-15-0	Carbon Disulfide	18	U
75-35-4	1,1-Dichloroethene	18	U
75-34-3	1,1-Dichloroethane	18	U
540-59-0	1,2-Dichloroethene (total)	18	U
67-66-3	Chloroform	18	U
107-06-2	1,2-Dichloroethane	18	U
78-93-3	2-Butanone	17	J
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	18	U
10061-02-6	cis-1,3-Dichloropropene	18	U
79-01-6	Trichloroethene	18	U
124-48-1	Dibromochloromethane	18	U
79-00-5	1,1,2-Trichloroethane	18	U
71-43-2	Benzene	18	U
10061-01-5	trans-1,3-Dichloropropene	18	U
75-25-2	Bromoform	18	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
108-88-3	Toluene	18	U
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	18	U
100-42-5	Styrene	18	U
1330-20-7	Xylene (total)	18	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY404

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FG072

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. 44 Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

60

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY404

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DG535

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 44 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	590	U
111-44-4	bis(2-Chloroethyl)Ether	590	U
95-57-8	2-Chlorophenol	590	U
541-73-1	1,3-Dichlorobenzene	590	U
106-46-7	1,4-Dichlorobenzene	52	J
95-50-1	1,2-Dichlorobenzene	250	J
95-48-7	2-Methylphenol	590	U
108-60-1	2,2'-oxybis(1-Chloropropane)	590	U
106-44-5	4-Methylphenol	590	U
621-64-7	N-Nitroso-Di-n-Propylamine	590	U
67-72-1	Hexachloroethane	590	U
98-95-3	Nitrobenzene	590	U
78-59-1	Isophorone	590	U
88-75-5	2-Nitrophenol	590	U
105-67-9	2,4-Dimethylphenol	590	U
111-91-1	bis(2-Chloroethoxy)Methane	590	U
120-83-2	2,4-Dichlorophenol	590	U
120-82-1	1,2,4-Trichlorobenzene	590	U
91-20-3	Naphthalene	590	U
106-47-8	4-Chloroaniline	590	U
87-68-3	Hexachlorobutadiene	590	U
59-50-7	4-Chloro-3-Methylphenol	590	U
91-57-6	2-Methylnaphthalene	37	J
77-47-4	Hexachlorocyclopentadiene	590	U
88-06-2	2,4,6-Trichlorophenol	590	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	590	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethyl Phthalate	590	U
208-96-8	Acenaphthylene	85	J
606-20-2	2,6-Dinitrotoluene	590	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	590	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY404

b Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DG535

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 44 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	590	U
121-14-2	2,4-Dinitrotoluene	590	U
84-66-2	Diethylphthalate	590	U
7005-72-3	4-Chlorophenyl-phenylether	590	U
86-73-7	Fluorene	590	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-Methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	63	J
101-55-3	4-Bromophenyl-phenylether	590	U
118-74-1	Hexachlorobenzene	590	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	200	J
120-12-7	Anthracene	36	J
86-74-8	Carbazole	590	U
84-74-2	Di-n-Butylphthalate	590	U
206-44-0	Fluoranthene	40	J
129-00-0	Pyrene	57	J
85-68-7	Butylbenzylphthalate	310	J
91-94-1	3,3'-Dichlorobenzidine	590	U
56-55-3	Benzo(a)Anthracene	590	U
218-01-9	Chrysene	590	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5400	E
117-84-0	Di-n-Octyl Phthalate	590	U
205-99-2	Benzo(b)Fluoranthene	590	U
207-08-9	Benzo(k)Fluoranthene	590	U
50-32-8	Benzo(a)Pyrene	590	U
193-39-5	Indeno(1,2,3-cd)Pyrene	590	U
53-70-3	Dibenz(a,h)Anthracene	590	U
191-24-2	Benzo(g,h,i)Perylene	590	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY404

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DG535

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: 44 decanted: (Y/N) N Date Extracted: 10/22/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.1

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.72	2700	J
2.		UNKNOWN C9H12 MW120	8.91	2300	J
3.	4436-75-3	3-Hexene-2,5-dione	9.30	2400	BJN
4.		UNKNOWN	10.07	1800	J
5.		UNKNOWN DIMETHYLBENZENE	11.25	6500	J
6.		UNKNOWN DIMETHYLBENZENE	11.37	1900	J
7.		UNKNOWN TRIMETHYLBENZENE	14.14	440	J
8.		UNKNOWN	16.18	560	J
9.		UNKNOWN	19.31	530	J
10.		UNKNOWN	19.83	1200	J
11.		UNKNOWN	20.52	1200	J
12.		UNKNOWN	20.93	1100	J
13.		UNKNOWN	21.04	1200	J
14.		UNKNOWN	21.11	1900	J
15.		UNKNOWN	21.20	1600	J
16.		UNKNOWN	21.36	710	J
17.		UNKNOWN	21.55	950	J
18.		UNKNOWN	21.61	2000	J
19.		UNKNOWN	24.67	740	J
20.		UNKNOWN MW242	25.20	1200	J
21.		UNKNOWN MW234	27.12	1600	J

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FY404

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004731

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

% Moisture: 44 decanted: (Y/N) N Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.1 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.0	U
319-85-7	beta-BHC	3.0	U
319-86-8	delta-BHC	3.0	U
58-89-9	gamma-BHC (Lindane)	3.0	U
76-44-8	Heptachlor	3.0	U
309-00-2	Aldrin	3.0	U
1024-57-3	Heptachlor epoxide	3.0	U
959-98-8	Endosulfan I	3.0	U
60-57-1	Dieldrin	5.9	U
72-55-9	4,4'-DDE	5.9	U
72-20-8	Endrin	5.9	U
33213-65-9	Endosulfan II	5.9	U
72-54-8	4,4'-DDD	5.9	U
1031-07-8	Endosulfan sulfate	5.9	U
50-29-3	4,4'-DDT	5.9	U
72-43-5	Methoxychlor	30	U
53494-70-5	Endrin ketone	5.9	U
7421-93-4	Endrin aldehyde	5.9	U
5103-71-9	alpha-Chlordane	3.0	U
5103-74-2	gamma-Chlordane	3.0	U
8001-35-2	Toxaphene	300	U
12674-11-2	Aroclor-1016	59	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	59	U
53469-21-9	Aroclor-1242	59	U
12672-29-6	Aroclor-1248	59	U
11097-69-1	Aroclor-1254	120	
11096-82-5	Aroclor-1260	59	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ704

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5332S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 54.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25000			P
7440-36-0	Antimony	14.6	U		P
7440-38-2	Arsenic	19.5			F
7440-39-3	Barium	219			P
7440-41-7	Beryllium	2.0			P
7440-43-9	Cadmium	5.6			P
7440-70-2	Calcium	6360			P
7440-47-3	Chromium	53.4			P
7440-48-4	Cobalt	11.7	B		P
7440-50-8	Copper	54.0			P
7439-89-6	Iron	25100			P
7439-92-1	Lead	24.2		SN	F
7439-95-4	Magnesium	6020			P
7439-96-5	Manganese	519			P
7439-97-6	Mercury	0.18	U		CV
7440-02-0	Nickel	28.0			P
7440-09-7	Potassium	2850			A
7782-49-2	Selenium	3.6	U	W	F
7440-22-4	Silver	2.7	B		P
7440-23-5	Sodium	621	B		P
7440-28-0	Thallium	1.1	U	WN	F
7440-62-2	Vanadium	57.6			P
7440-66-6	Zinc	135			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY500

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ059

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 35 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	48	B
67-64-1	Acetone	88	
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	16	
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-02-6	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-01-5	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (total)	15	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY500

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ059

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 35 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon Dioxide	1.26	370	BJN

209

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY500

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG884

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	500	U
111-44-4	bis(2-Chloroethyl)Ether	500	U
95-57-8	2-Chlorophenol	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
95-50-1	1,2-Dichlorobenzene	500	U
95-48-7	2-Methylphenol	500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	500	U
106-44-5	4-Methylphenol	500	U
621-64-7	N-Nitroso-Di-n-Propylamine	500	U
67-72-1	Hexachloroethane	500	U
98-95-3	Nitrobenzene	500	U
78-59-1	Isophorone	500	U
88-75-5	2-Nitrophenol	500	U
105-67-9	2,4-Dimethylphenol	500	U
111-91-1	bis(2-Chloroethoxy)Methane	500	U
120-83-2	2,4-Dichlorophenol	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
91-20-3	Naphthalene	500	U
106-47-8	4-Chloroaniline	500	U
87-68-3	Hexachlorobutadiene	500	U
59-50-7	4-Chloro-3-Methylphenol	500	U
91-57-6	2-Methylnaphthalene	500	U
77-47-4	Hexachlorocyclopentadiene	500	U
88-06-2	2,4,6-Trichlorophenol	500	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	500	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethyl Phthalate	500	U
208-96-8	Acenaphthylene	500	U
606-20-2	2,6-Dinitrotoluene	500	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	500	U

1043

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY500

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG884

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200	U
100-02-7	4-Nitrophenol	1200	U
132-64-9	Dibenzofuran	500	U
121-14-2	2,4-Dinitrotoluene	500	U
84-66-2	Diethylphthalate	500	U
7005-72-3	4-Chlorophenyl-phenylether	500	U
86-73-7	Fluorene	500	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-Methylphenol	1200	U
86-30-6	N-Nitrosodiphenylamine (1)	500	U
101-55-3	4-Bromophenyl-phenylether	500	U
118-74-1	Hexachlorobenzene	500	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	26	J
120-12-7	Anthracene	500	U
86-74-8	Carbazole	500	U
84-74-2	Di-n-Butylphthalate	500	U
206-44-0	Fluoranthene	29	J
129-00-0	Pyrene	49	J
85-68-7	Butylbenzylphthalate	58	J
91-94-1	3,3'-Dichlorobenzidine	500	U
56-55-3	Benzo(a)Anthracene	500	U
218-01-9	Chrysene	500	U
117-81-7	bis(2-Ethylhexyl)Phthalate	41	J
117-84-0	Di-n-Octyl Phthalate	500	U
205-99-2	Benzo(b)Fluoranthene	500	U
207-08-9	Benzo(k)Fluoranthene	500	U
50-32-8	Benzo(a)Pyrene	500	U
193-39-5	Indeno(1,2,3-cd)Pyrene	500	U
53-70-3	Dibenz(a,h)Anthracene	500	U
191-24-2	Benzo(g,h,i)Perylene	500	U

(1) - Cannot be separated from Diphenylamine

1044

1F

EPA SAMPLE NO.

FY500

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG884

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.87	38000	ABJN
2.		UNKNOWN HYDROCARBON C9H20 MW	5.93	280	BJ
3.		UNKNOWN	6.00	330	J
4.	2216-33-3	Octane, 3-methyl-	6.07	280	BJN
5.		UNKNOWN	7.02	1500	BJ
6.		UNKNOWN MW136 C10H16	7.33	330	J
7.	4436-75-3	3-Hexene-2,5-dione	7.62	1400	BJN
8.		UNKNOWN	8.70	280	BJ
9.		UNKNOWN	9.39	660	J
10.		UNKNOWN	9.46	1200	J
11.		UNKNOWN MW204 C15H24	15.45	330	J
12.		UNKNOWN	22.25	200	J
13.		UNKNOWN	22.71	460	J
14.		UNKNOWN NW238 C18H12	23.55	180	J
15.		UNKNOWN MW252	23.87	1900	J
16.		UNKNOWN MW234 C18H18	24.80	890	J
17.		UNKNOWN	25.63	610	J
18.		UNKNOWN	26.48	560	J
19.		UNKNOWN	28.08	630	J
20.		UNKNOWN HYDROCARBON C29H60	29.57	790	J
21.		UNKNOWN HYDROCARBON	31.29	690	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY500

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004754

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

% Moisture: 35 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.6	U
319-85-7	beta-BHC	2.6	U
319-86-8	delta-BHC	2.6	U
58-89-9	gamma-BHC (Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	2.6	U
1024-57-3	Heptachlor epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.0	U
72-55-9	4,4'-DDE	5.0	U
72-20-8	Endrin	5.0	U
33213-65-9	Endosulfan II	5.0	U
72-54-8	4,4'-DDD	5.0	U
1031-07-8	Endosulfan sulfate	5.0	U
50-29-3	4,4'-DDT	5.0	U
72-43-5	Methoxychlor	26	U
53494-70-5	Endrin ketone	5.0	U
7421-93-4	Endrin aldehyde	5.0	U
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260	U
12674-11-2	Aroclor-1016	50	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	50	U
53469-21-9	Aroclor-1242	50	U
12672-29-6	Aroclor-1248	50	U
11097-69-1	Aroclor-1254	46	J
11096-82-5	Aroclor-1260	50	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ801

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5336S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 41.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20200			P
7440-36-0	Antimony	19.1	U		P
7440-38-2	Arsenic	26.3		S	F
7440-39-3	Barium	205			P
7440-41-7	Beryllium	1.7	B		P
7440-43-9	Cadmium	5.1			P
7440-70-2	Calcium	6510			P
7440-47-3	Chromium	29.0			P
7440-48-4	Cobalt	15.6	B		P
7440-50-8	Copper	44.1			P
7439-89-6	Iron	22500			P
7439-92-1	Lead	78.8		N	F
7439-95-4	Magnesium	4900			P
7439-96-5	Manganese	509			P
7439-97-6	Mercury	0.24	U		CV
7440-02-0	Nickel	39.3			P
7440-09-7	Potassium	1620	B		A
7782-49-2	Selenium	4.8	U		F
7440-22-4	Silver	6.5			P
7440-23-5	Sodium	659	B		P
7440-28-0	Thallium	1.4	U	WN	F
7440-62-2	Vanadium	45.2			P
7440-66-6	Zinc	151			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY406

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ044

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 40 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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	60	B
67-64-1	Acetone	330	
75-15-0	Carbon Disulfide	17	U
75-35-4	1,1-Dichloroethene	17	U
75-34-3	1,1-Dichloroethane	17	U
540-59-0	1,2-Dichloroethene (total)	17	U
67-66-3	Chloroform	17	U
107-06-2	1,2-Dichloroethane	17	U
78-93-3	2-Butanone	44	
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
75-27-4	Bromodichloromethane	17	U
78-87-5	1,2-Dichloropropane	17	U
10061-02-6	cis-1,3-Dichloropropene	17	U
79-01-6	Trichloroethene	17	U
124-48-1	Dibromochloromethane	17	U
79-00-5	1,1,2-Trichloroethane	17	U
71-43-2	Benzene	17	U
10061-01-5	trans-1,3-Dichloropropene	17	U
75-25-2	Bromoform	17	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
108-88-3	Toluene	17	U
108-90-7	Chlorobenzene	17	U
100-41-4	Ethylbenzene	17	U
100-42-5	Styrene	17	U
1330-20-7	Xylene (total)	17	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY406

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ044

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 40 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon Dioxide	1.35	730	BJN

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FY406

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG879

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	550	U
111-44-4	bis(2-Chloroethyl)Ether	550	U
95-57-8	2-Chlorophenol	550	U
541-73-1	1,3-Dichlorobenzene	550	U
106-46-7	1,4-Dichlorobenzene	59	J
95-50-1	1,2-Dichlorobenzene	190	J
95-48-7	2-Methylphenol	550	U
108-60-1	2,2'-oxybis(1-Chloropropane)	550	U
106-44-5	4-Methylphenol	550	U
621-64-7	N-Nitroso-Di-n-Propylamine	550	U
67-72-1	Hexachloroethane	550	U
98-95-3	Nitrobenzene	550	U
78-59-1	Isophorone	550	U
88-75-5	2-Nitrophenol	550	U
105-67-9	2,4-Dimethylphenol	550	U
111-91-1	bis(2-Chloroethoxy)Methane	550	U
120-83-2	2,4-Dichlorophenol	550	U
120-82-1	1,2,4-Trichlorobenzene	550	U
91-20-3	Naphthalene	550	U
106-47-8	4-Chloroaniline	550	U
87-68-3	Hexachlorobutadiene	550	U
59-50-7	4-Chloro-3-Methylphenol	550	U
91-57-6	2-Methylnaphthalene	38	J
77-47-4	Hexachlorocyclopentadiene	550	U
88-06-2	2,4,6-Trichlorophenol	550	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	550	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethyl Phthalate	550	U
208-96-8	Acenaphthylene	550	U
606-20-2	2,6-Dinitrotoluene	550	U
99-09-2	3-Nitroaniline	1300	U
83-32-9	Acenaphthene	550	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY406

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG879

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1300	U
100-02-7	4-Nitrophenol	1300	U
132-64-9	Dibenzofuran	550	U
121-14-2	2,4-Dinitrotoluene	550	U
84-66-2	Diethylphthalate	550	U
7005-72-3	4-Chlorophenyl-phenylether	550	U
86-73-7	Fluorene	550	U
100-01-6	4-Nitroaniline	1300	U
534-52-1	4,6-Dinitro-2-Methylphenol	1300	U
86-30-6	N-Nitrosodiphenylamine (1)	61	J
101-55-3	4-Bromophenyl-phenylether	550	U
118-74-1	Hexachlorobenzene	550	U
87-86-5	Pentachlorophenol	1300	U
85-01-8	Phenanthrene	180	J
120-12-7	Anthracene	550	U
86-74-8	Carbazole	550	U
84-74-2	Di-n-Butylphthalate	550	U
206-44-0	Fluoranthene	29	J
129-00-0	Pyrene	45	J
85-68-7	Butylbenzylphthalate	83	J
91-94-1	3,3'-Dichlorobenzidine	550	U
56-55-3	Benzo(a)Anthracene	550	U
218-01-9	Chrysene	550	U
117-81-7	bis(2-Ethylhexyl)Phthalate	600	
117-84-0	Di-n-Octyl Phthalate	550	U
205-99-2	Benzo(b)Fluoranthene	550	U
207-08-9	Benzo(k)Fluoranthene	550	U
50-32-8	Benzo(a)Pyrene	550	U
193-39-5	Indeno(1,2,3-cd)Pyrene	550	U
53-70-3	Dibenz(a,h)Anthracene	550	U
191-24-2	Benzo(g,h,i)Perylene	550	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY406

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG879

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 40 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.85	33000	ABJN
2.		UNKNOWN	7.02	1200	BJ
3.	4436-75-3	Hexene-2,5-dione	7.62	1500	BJN
4.		UNKNOWN DIETHYLBENZENE	9.42	1900	J
5.		UNKNOWN	9.48	1200	J
6.		UNKNOWN DIETHYLBENZENE	9.54	640	J
7.		UNKNOWN	17.79	750	J
8.		UNKNOWN	18.44	1200	J
9.		UNKNOWN	18.87	970	J
10.		UNKNOWN	18.99	1500	J
11.		UNKNOWN	19.08	2700	J
12.		UNKNOWN	19.16	2000	J
13.		UNKNOWN	19.24	1200	J
14.		UNKNOWN	19.32	1300	J
15.		UNKNOWN	19.47	1700	J
16.		UNKNOWN	19.55	1400	J
17.		UNKNOWN	19.61	1200	J
18.		UNKNOWN	19.68	860	J
19.		UNKNOWN	22.43	1500	J
20.		UNKNOWN	22.73	780	J
21.		UNKNOWN	22.97	890	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY406

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004749

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

% Moisture: 40 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.8	U
319-85-7	beta-BHC	2.8	U
319-86-8	delta-BHC	2.8	U
58-89-9	gamma-BHC (Lindane)	2.8	U
76-44-8	Heptachlor	2.8	U
309-00-2	Aldrin	2.8	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	2.8	U
60-57-1	Dieldrin	5.5	U
72-55-9	4,4'-DDE	5.5	U
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II	5.5	U
72-54-8	4,4'-DDD	5.5	U
1031-07-8	Endosulfan sulfate	5.5	U
50-29-3	4,4'-DDT	5.5	U
72-43-5	Methoxychlor	28	U
53494-70-5	Endrin ketone	5.5	U
7421-93-4	Endrin aldehyde	5.5	U
5103-71-9	alpha-Chlordane	2.8	U
5103-74-2	gamma-Chlordane	2.8	U
8001-35-2	Toxaphene	280	U
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	18	J
11096-82-5	Aroclor-1260	55	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ706

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5335S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 64.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17500			P
7440-36-0	Antimony	12.4	U		P
7440-38-2	Arsenic	22.8		S	F
7440-39-3	Barium	191			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	4.1			P
7440-70-2	Calcium	6590			P
7440-47-3	Chromium	52.3			P
7440-48-4	Cobalt	10.1	B		P
7440-50-8	Copper	37.6			P
7439-89-6	Iron	20800			P
7439-92-1	Lead	18.2		N	F
7439-95-4	Magnesium	5570			P
7439-96-5	Manganese	426			P
7439-97-6	Mercury	0.16	U		CV
7440-02-0	Nickel	25.3			P
7440-09-7	Potassium	1920			A
7782-49-2	Selenium	3.1	U		F
7440-22-4	Silver	4.2			P
7440-23-5	Sodium	444	B		P
7440-28-0	Thallium	0.93	U	WN	F
7440-62-2	Vanadium	45.6			P
7440-66-6	Zinc	115			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY407

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ045

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 55 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	60	B
67-64-1	Acetone	160	
75-15-0	Carbon Disulfide	22	U
75-35-4	1,1-Dichloroethene	22	U
75-34-3	1,1-Dichloroethane	22	U
540-59-0	1,2-Dichloroethene (total)	22	U
67-66-3	Chloroform	22	U
107-06-2	1,2-Dichloroethane	22	U
78-93-3	2-Butanone	20	J
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
75-27-4	Bromodichloromethane	22	U
78-87-5	1,2-Dichloropropane	22	U
10061-02-6	cis-1,3-Dichloropropene	22	U
79-01-6	Trichloroethene	22	U
124-48-1	Dibromochloromethane	22	U
79-00-5	1,1,2-Trichloroethane	22	U
71-43-2	Benzene	22	U
10061-01-5	trans-1,3-Dichloropropene	22	U
75-25-2	Bromoform	22	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-88-3	Toluene	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U
100-42-5	Styrene	22	U
1330-20-7	Xylene (total)	22	U

84

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY407

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ045

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 55 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon Dioxide	1.36	330	BJN
2.		UNKNOWN	30.18	57	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY407

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG880

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

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
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	1800	U
91-58-7	2-Chloronaphthalene	730	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	730	U
208-96-8	Acenaphthylene	730	U
606-20-2	2,6-Dinitrotoluene	730	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	730	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY407

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG880

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	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	1800	U
85-01-8	Phenanthrene	91	J
120-12-7	Anthracene	730	U
86-74-8	Carbazole	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	730	U
129-00-0	Pyrene	730	U
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	730	U
56-55-3	Benzo(a)Anthracene	730	U
218-01-9	Chrysene	730	U
117-81-7	bis(2-Ethylhexyl)Phthalate	730	U
117-84-0	Di-n-Octyl Phthalate	730	U
205-99-2	Benzo(b)Fluoranthene	730	U
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

EPA SAMPLE NO.

FY407

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG880

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.86	51000	ABJN
2.		UNKNOWN	6.00	480	J
3.		UNKNOWN	7.02	1800	BJ
4.	4436-75-3	3-Hexene-2,5-dione	7.60	1500	JNB
5.		UNKNOWN	8.38	2800	J
6.		UNKNOWN	8.70	440	BJ
7.		UNKNOWN	9.37	590	J
8.		UNKNOWN	9.47	2500	J
9.		UNKNOWN DIETHYLBENZENE	9.53	330	J
10.		UNKNOWN TRIETHYLBENZENE	12.26	370	J
11.		UNKNOWN C14H1802 MW218	17.27	290	J
12.		UNKNOWN	18.85	550	J
13.		UNKNOWN C14H12 MW180	19.22	770	J
14.		UNKNOWN	22.69	550	J
15.		UNKNOWN MW252	23.86	1700	J
16.		UNKNOWN	25.68	920	J
17.		UNKNOWN	27.29	920	J
18.		UNKNOWN MW274	28.38	2400	J
19.		UNKNOWN MW218	28.58	1500	J
20.		UNKNOWN HYDROCARBON C29H60 M	29.56	3300	J
21.		UNKNOWN HYDROCARBON	31.28	1900	J

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FY407

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004750

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

% Moisture: 55 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.7	U
319-85-7	beta-BHC	3.7	U
319-86-8	delta-BHC	3.7	U
58-89-9	gamma-BHC (Lindane)	3.7	U
76-44-8	Heptachlor	3.7	U
309-00-2	Aldrin	3.7	U
1024-57-3	Heptachlor epoxide	3.7	U
959-98-8	Endosulfan I	3.7	U
60-57-1	Dieldrin	7.3	U
72-55-9	4,4'-DDE	7.3	U
72-20-8	Endrin	7.3	U
33213-65-9	Endosulfan II	7.3	U
72-54-8	4,4'-DDD	7.3	U
1031-07-8	Endosulfan sulfate	7.3	U
50-29-3	4,4'-DDT	7.3	U
72-43-5	Methoxychlor	37	U
53494-70-5	Endrin ketone	7.3	U
7421-93-4	Endrin aldehyde	7.3	U
5103-71-9	alpha-Chlordane	3.7	U
5103-74-2	gamma-Chlordane	3.7	U
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	73	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	73	U
53469-21-9	Aroclor-1242	73	U
12672-29-6	Aroclor-1248	73	U
11097-69-1	Aroclor-1254	16	JP
11096-82-5	Aroclor-1260	73	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ707

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5334S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 38.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	32500			P
7440-36-0	Antimony	20.7	U		P
7440-38-2	Arsenic	36.1		S	F
7440-39-3	Barium	242			P
7440-41-7	Beryllium	2.3	B		P
7440-43-9	Cadmium	6.5			P
7440-70-2	Calcium	6010			P
7440-47-3	Chromium	45.0			P
7440-48-4	Cobalt	15.8	B		P
7440-50-8	Copper	70.3			P
7439-89-6	Iron	32900			P
7439-92-1	Lead	42.1		+N	F
7439-95-4	Magnesium	7400			P
7439-96-5	Manganese	561			P
7439-97-6	Mercury	0.26	U		CV
7440-02-0	Nickel	35.3			P
7440-09-7	Potassium	3690			A
7782-49-2	Selenium	5.2	U	E	F
7440-22-4	Silver	11.0			P
7440-23-5	Sodium	1050	B		P
7440-28-0	Thallium	1.6	U	WN	F
7440-62-2	Vanadium	76.0			P
7440-66-6	Zinc	157			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY408

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ046

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 56 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	79	B
67-64-1	Acetone	370	
75-15-0	Carbon Disulfide	23	U
75-35-4	1,1-Dichloroethene	23	U
75-34-3	1,1-Dichloroethane	23	U
540-59-0	1,2-Dichloroethene (total)	23	U
67-66-3	Chloroform	23	U
107-06-2	1,2-Dichloroethane	23	U
78-93-3	2-Butanone	59	
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
75-27-4	Bromodichloromethane	23	U
78-87-5	1,2-Dichloropropane	23	U
10061-02-6	cis-1,3-Dichloropropene	23	U
79-01-6	Trichloroethene	23	U
124-48-1	Dibromochloromethane	23	U
79-00-5	1,1,2-Trichloroethane	23	U
71-43-2	Benzene	23	U
10061-01-5	trans-1,3-Dichloropropene	23	U
75-25-2	Bromoform	23	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
108-88-3	Toluene	23	U
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U
100-42-5	Styrene	23	U
1330-20-7	Xylene (total)	23	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY408

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ046

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 56 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon Dioxide	1.32	890	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY408

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG881

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750	U
111-44-4	bis(2-Chloroethyl)Ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	76	J
95-50-1	1,2-Dichlorobenzene	170	J
95-48-7	2-Methylphenol	750	U
108-60-1	2,2'-oxybis(1-Chloropropane)	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitroso-Di-n-Propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
111-91-1	bis(2-Chloroethoxy)Methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	750	U
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-Methylphenol	750	U
91-57-6	2-Methylnaphthalene	750	U
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	750	U
208-96-8	Acenaphthylene	750	U
606-20-2	2,6-Dinitrotoluene	750	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	750	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY408

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG881

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	750	U
121-14-2	2,4-Dinitrotoluene	750	U
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl-phenylether	750	U
86-73-7	Fluorene	750	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	750	U
101-55-3	4-Bromophenyl-phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	91	J
120-12-7	Anthracene	750	U
86-74-8	Carbazole	750	U
84-74-2	Di-n-Butylphthalate	750	U
206-44-0	Fluoranthene	61	J
129-00-0	Pyrene	98	J
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)Anthracene	750	U
218-01-9	Chrysene	750	U
117-81-7	bis(2-Ethylhexyl)Phthalate	350	J
117-84-0	Di-n-Octyl Phthalate	50	J
205-99-2	Benzo(b)Fluoranthene	750	U
207-08-9	Benzo(k)Fluoranthene	750	U
50-32-8	Benzo(a)Pyrene	750	U
193-39-5	Indeno(1,2,3-cd)Pyrene	750	U
53-70-3	Dibenz(a,h)Anthracene	750	U
191-24-2	Benzo(g,h,i)Perylene	750	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY408

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG881

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.84	60000	ABJN
2.		UNKNOWN	7.02	2200	BJ
3.	4436-75-3	3-Hexene-2,5-dione	7.62	2100	BJN
4.		UNKNOWN	9.48	2100	J
5.		UNKNOWN C15H24O MW220	16.52	570	J
6.		UNKNOWN	17.79	680	J
7.		UNKNOWN HYDROCARBON	18.65	1300	J
8.		UNKNOWN	19.00	1700	J
9.		UNKNOWN	19.08	3300	J
10.		UNKNOWN	19.16	2300	J
11.		UNKNOWN	19.24	1300	J
12.		UNKNOWN	19.32	1500	J
13.		UNKNOWN	19.47	1900	J
14.		UNKNOWN	19.56	1900	J
15.		UNKNOWN	19.61	1400	J
16.		UNKNOWN	19.68	1100	J
17.		UNKNOWN HYDROCARBON	19.86	1100	J
18.	10544-50-0	Sulfur, mol (S8)	22.02	28000	JN
19.		UNKNOWN	22.43	1500	J
20.		UNKNOWN	22.72	1700	J
21.		UNKNOWN MW242	22.98	1400	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY408

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004751

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

% Moisture: 56 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.8	U
319-85-7	beta-BHC	3.8	U
319-86-8	delta-BHC	3.8	U
58-89-9	gamma-BHC (Lindane)	3.8	U
76-44-8	Heptachlor	3.8	U
309-00-2	Aldrin	3.8	U
1024-57-3	Heptachlor epoxide	3.8	U
959-98-8	Endosulfan I	3.8	U
60-57-1	Dieldrin	7.4	U
72-55-9	4,4'-DDE	7.4	U
72-20-8	Endrin	7.4	U
33213-65-9	Endosulfan II	7.4	U
72-54-8	4,4'-DDD	7.4	U
1031-07-8	Endosulfan sulfate	7.4	U
50-29-3	4,4'-DDT	7.4	U
72-43-5	Methoxychlor	38	U
53494-70-5	Endrin ketone	7.4	U
7421-93-4	Endrin aldehyde	7.4	U
5103-71-9	alpha-Chlordane	3.8	U
5103-74-2	gamma-Chlordane	3.8	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	74	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	74	U
53469-21-9	Aroclor-1242	74	U
12672-29-6	Aroclor-1248	74	U
11097-69-1	Aroclor-1254	76	
11096-82-5	Aroclor-1260	74	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ708

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5337S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 47.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	29200			P
7440-36-0	Antimony	16.8	U		P
7440-38-2	Arsenic	28.1		S	F
7440-39-3	Barium	246			P
7440-41-7	Beryllium	2.2			P
7440-43-9	Cadmium	5.9			P
7440-70-2	Calcium	5470			P
7440-47-3	Chromium	59.8			P
7440-48-4	Cobalt	13.3	B		P
7440-50-8	Copper	37.1			P
7439-89-6	Iron	29100			P
7439-92-1	Lead	75.6		N	F
7439-95-4	Magnesium	5950			P
7439-96-5	Manganese	498			P
7439-97-6	Mercury	0.21	U		CV
7440-02-0	Nickel	41.9			P
7440-09-7	Potassium	2850			A
7782-49-2	Selenium	4.2	U	W	F
7440-22-4	Silver	2.9	U		P
7440-23-5	Sodium	920	B		P
7440-28-0	Thallium	1.3	U	WN	F
7440-62-2	Vanadium	64.3			P
7440-66-6	Zinc	171			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ047

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 47 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	58	B
67-64-1	Acetone	140	
75-15-0	Carbon Disulfide	19	U
75-35-4	1,1-Dichloroethene	19	U
75-34-3	1,1-Dichloroethane	19	U
540-59-0	1,2-Dichloroethene (total)	19	U
67-66-3	Chloroform	19	U
107-06-2	1,2-Dichloroethane	19	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
75-27-4	Bromodichloromethane	19	U
78-87-5	1,2-Dichloropropane	19	U
10061-02-6	cis-1,3-Dichloropropene	19	U
79-01-6	Trichloroethene	19	U
124-48-1	Dibromochloromethane	19	U
79-00-5	1,1,2-Trichloroethane	19	U
71-43-2	Benzene	19	U
10061-01-5	trans-1,3-Dichloropropene	19	U
75-25-2	Bromoform	19	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
108-88-3	Toluene	19	U
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
1330-20-7	Xylene (total)	19	U

110

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ047

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 47 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon Dioxide	1.27	770	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG882

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 47 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	620	U
111-44-4	bis(2-Chloroethyl)Ether	620	U
95-57-8	2-Chlorophenol	620	U
541-73-1	1,3-Dichlorobenzene	620	U
106-46-7	1,4-Dichlorobenzene	620	U
95-50-1	1,2-Dichlorobenzene	620	U
95-48-7	2-Methylphenol	620	U
108-60-1	2,2'-oxybis(1-Chloropropane)	620	U
106-44-5	4-Methylphenol	620	U
621-64-7	N-Nitroso-Di-n-Propylamine	620	U
67-72-1	Hexachloroethane	620	U
98-95-3	Nitrobenzene	620	U
78-59-1	Isophorone	620	U
88-75-5	2-Nitrophenol	620	U
105-67-9	2,4-Dimethylphenol	620	U
111-91-1	bis(2-Chloroethoxy)Methane	620	U
120-83-2	2,4-Dichlorophenol	620	U
120-82-1	1,2,4-Trichlorobenzene	620	U
91-20-3	Naphthalene	620	U
106-47-8	4-Chloroaniline	620	U
87-68-3	Hexachlorobutadiene	620	U
59-50-7	4-Chloro-3-Methylphenol	620	U
91-57-6	2-Methylnaphthalene	620	U
77-47-4	Hexachlorocyclopentadiene	620	U
88-06-2	2,4,6-Trichlorophenol	620	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	620	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethyl Phthalate	620	U
208-96-8	Acenaphthylene	620	U
606-20-2	2,6-Dinitrotoluene	620	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	620	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG882

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 47 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	620	U
121-14-2	2,4-Dinitrotoluene	620	U
84-66-2	Diethylphthalate	620	U
7005-72-3	4-Chlorophenyl-phenylether	620	U
86-73-7	Fluorene	620	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	620	U
101-55-3	4-Bromophenyl-phenylether	620	U
118-74-1	Hexachlorobenzene	620	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	42	J
120-12-7	Anthracene	620	U
86-74-8	Carbazole	620	U
84-74-2	Di-n-Butylphthalate	620	U
206-44-0	Fluoranthene	41	J
129-00-0	Pyrene	65	J
85-68-7	Butylbenzylphthalate	620	U
91-94-1	3,3'-Dichlorobenzidine	620	U
56-55-3	Benzo(a)Anthracene	620	U
218-01-9	Chrysene	620	U
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
117-84-0	Di-n-Octyl Phthalate	620	U
205-99-2	Benzo(b)Fluoranthene	620	U
207-08-9	Benzo(k)Fluoranthene	620	U
50-32-8	Benzo(a)Pyrene	620	U
193-39-5	Indeno(1,2,3-cd)Pyrene	620	U
53-70-3	Dibenz(a,h)Anthracene	620	U
191-24-2	Benzo(g,h,i)Perylene	620	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG882

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 47 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.83	50000	ABJN
2.		UNKNOWN	7.02	1700	BJ
3.	4436-75-3	3-Hexene-2,5-dione	7.61	1800	BJN
4.		UNKNOWN	8.70	410	BJ
5.		UNKNOWN	9.38	660	J
6.		UNKNOWN	9.46	1500	J
7.		UNKNOWN DIETHYLBENZENE	9.53	410	J
8.		UNKNOWN C12H22 MW166	11.70	320	J
9.		UNKNOWN TRIETHYLBENZENE	12.27	320	J
10.		UNKNOWN MW218	17.28	690	J
11.		UNKNOWN	18.45	880	J
12.		UNKNOWN	18.86	600	J
13.	604-88-6	Benzene, hexaethyl-	18.96	690	JN
14.		UNKNOWN C14H12 MW180	19.23	410	J
15.		UNKNOWN HYDROCARBON	19.85	470	J
16.		UNKNOWN C18H22 MW238	20.03	540	J
17.		UNKNOWN C18H22 MW238	20.19	380	J
18.		UNKNOWN	20.54	320	J
19.		UNKNOWN	22.72	660	J
20.		UNKNOWN MW252	23.87	2700	J
21.		UNKNOWN	24.22	950	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY409

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004752

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

% Moisture: 47 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.2	U
319-85-7	beta-BHC	3.2	U
319-86-8	delta-BHC	3.2	U
58-89-9	gamma-BHC (Lindane)	3.2	U
76-44-8	Heptachlor	3.2	U
309-00-2	Aldrin	3.2	U
1024-57-3	Heptachlor epoxide	3.2	U
959-98-8	Endosulfan I	3.2	U
60-57-1	Dieldrin	6.2	U
72-55-9	4,4'-DDE	6.2	U
72-20-8	Endrin	6.2	U
33213-65-9	Endosulfan II	6.2	U
72-54-8	4,4'-DDD	6.2	U
1031-07-8	Endosulfan sulfate	6.2	U
50-29-3	4,4'-DDT	6.2	U
72-43-5	Methoxychlor	32	U
53494-70-5	Endrin ketone	6.2	U
7421-93-4	Endrin aldehyde	6.2	U
5103-71-9	alpha-Chlordane	3.2	U
5103-74-2	gamma-Chlordane	3.2	U
8001-35-2	Toxaphene	320	U
12674-11-2	Aroclor-1016	62	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	62	U
53469-21-9	Aroclor-1242	62	U
12672-29-6	Aroclor-1248	62	U
11097-69-1	Aroclor-1254	81	
11096-82-5	Aroclor-1260	62	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ709

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5338S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 56.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23300			P
7440-36-0	Antimony	14.3	U		P
7440-38-2	Arsenic	17.7			F
7440-39-3	Barium	207			P
7440-41-7	Beryllium	1.8			P
7440-43-9	Cadmium	3.9			P
7440-70-2	Calcium	7530			P
7440-47-3	Chromium	32.4			P
7440-48-4	Cobalt	12.0	B		P
7440-50-8	Copper	30.0			P
7439-89-6	Iron	23300			P
7439-92-1	Lead	57.1		N	F
7439-95-4	Magnesium	5800			P
7439-96-5	Manganese	581			P
7439-97-6	Mercury	0.18	U		CV
7440-02-0	Nickel	31.2			P
7440-09-7	Potassium	2620			A
7782-49-2	Selenium	3.6	U	W	F
7440-22-4	Silver	2.5	U		P
7440-23-5	Sodium	479	B		P
7440-28-0	Thallium	1.1	U	WN	F
7440-62-2	Vanadium	52.0			P
7440-66-6	Zinc	123			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY410

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ048

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 48 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	65	B
67-64-1	Acetone	160	
75-15-0	Carbon Disulfide	19	U
75-35-4	1,1-Dichloroethene	19	U
75-34-3	1,1-Dichloroethane	19	U
540-59-0	1,2-Dichloroethene (total)	19	U
67-66-3	Chloroform	19	U
107-06-2	1,2-Dichloroethane	19	U
78-93-3	2-Butanone	22	
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
75-27-4	Bromodichloromethane	19	U
78-87-5	1,2-Dichloropropane	19	U
10061-02-6	cis-1,3-Dichloropropene	19	U
79-01-6	Trichloroethene	19	U
124-48-1	Dibromochloromethane	19	U
79-00-5	1,1,2-Trichloroethane	19	U
71-43-2	Benzene	3	J
10061-01-5	trans-1,3-Dichloropropene	19	U
75-25-2	Bromoform	19	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
108-88-3	Toluene	8	J
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
1330-20-7	Xylene (total)	19	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY410

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ048

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: not dec. 48 Date Analyzed: 10/26/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon Dioxide	1.26	580	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY410

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG883

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl)Ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	630	U
106-46-7	1,4-Dichlorobenzene	630	U
95-50-1	1,2-Dichlorobenzene	630	U
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-Di-n-Propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy)Methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	630	U
91-20-3	Naphthalene	630	U
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	630	U
59-50-7	4-Chloro-3-Methylphenol	630	U
91-57-6	2-Methylnaphthalene	630	U
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethyl Phthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	630	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY410

ab Name: RECRA ENVIRON Contract: 68D20035

ab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG883

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	630	U
121-14-2	2,4-Dinitrotoluene	630	U
84-66-2	Diethylphthalate	630	U
7005-72-3	4-Chlorophenyl-phenylether	630	U
86-73-7	Fluorene	630	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	630	U
101-55-3	4-Bromophenyl-phenylether	630	U
118-74-1	Hexachlorobenzene	630	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	52	J
120-12-7	Anthracene	630	U
86-74-8	Carbazole	630	U
84-74-2	Di-n-Butylphthalate	630	U
206-44-0	Fluoranthene	630	U
129-00-0	Pyrene	630	U
85-68-7	Butylbenzylphthalate	140	J
91-94-1	3,3'-Dichlorobenzidine	630	U
56-55-3	Benzo(a)Anthracene	630	U
218-01-9	Chrysene	630	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1500	
117-84-0	Di-n-Octyl Phthalate	630	U
205-99-2	Benzo(b)Fluoranthene	630	U
207-08-9	Benzo(k)Fluoranthene	630	U
50-32-8	Benzo(a)Pyrene	630	U
193-39-5	Indeno(1,2,3-cd)Pyrene	630	U
53-70-3	Dibenz(a,h)Anthracene	630	U
191-24-2	Benzo(g,h,i)Perylene	630	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY410

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG883

Level: (low/med) LOW Date Received: 10/22/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/23/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/26/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	4-Hydroxy-4-methyl-2-pentano	5.79	45000	ABJN
2.		UNKNOWN	6.00	890	J
3.		UNKNOWN	7.02	1700	BJ
4.	4436-75-3	3-Hexene-2,5-dione	7.62	700	BJN
5.		UNKNOWN	8.37	800	J
6.		UNKNOWN MW134 C10H14	8.98	480	J
7.		UNKNOWN	9.47	1600	J
8.		UNKNOWN	17.79	380	J
9.		UNKNOWN	18.87	290	J
10.		UNKNOWN	18.99	570	J
11.		UNKNOWN	19.06	990	J
12.		UNKNOWN	19.16	670	J
13.		UNKNOWN	19.23	380	J
14.		UNKNOWN	19.32	420	J
15.		UNKNOWN	19.46	450	J
16.		UNKNOWN	19.55	510	J
17.		UNKNOWN	19.60	480	J
18.		UNKNOWN	22.73	450	J
19.		UNKNOWN	22.94	570	J
20.		UNKNOWN MW252	23.87	990	J
21.		UNKNOWN MW234 C18H18	24.80	380	J

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

FY410

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004753

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

% Moisture: 48 decanted: (Y/N) N Date Received: 10/22/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/23/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/27/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.2	U
319-85-7	beta-BHC	3.2	U
319-86-8	delta-BHC	3.2	U
58-89-9	gamma-BHC (Lindane)	3.2	U
76-44-8	Heptachlor	3.2	U
309-00-2	Aldrin	3.2	U
1024-57-3	Heptachlor epoxide	3.2	U
959-98-8	Endosulfan I	3.2	U
60-57-1	Dieldrin	6.3	U
72-55-9	4,4'-DDE	6.3	U
72-20-8	Endrin	6.3	U
33213-65-9	Endosulfan II	6.3	U
72-54-8	4,4'-DDD	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
50-29-3	4,4'-DDT	6.3	U
72-43-5	Methoxychlor	32	U
53494-70-5	Endrin ketone	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
5103-71-9	alpha-Chlordane	3.2	U
5103-74-2	gamma-Chlordane	3.2	U
8001-35-2	Toxaphene	320	U
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	63	U
11097-69-1	Aroclor-1254	63	U
11096-82-5	Aroclor-1260	63	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ710

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5339S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 49.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	32200			P
7440-36-0	Antimony	16.1	U		P
7440-38-2	Arsenic	21.6			F
7440-39-3	Barium	275			P
7440-41-7	Beryllium	2.4			P
7440-43-9	Cadmium	4.5			P
7440-70-2	Calcium	5230			P
7440-47-3	Chromium	43.4			P
7440-48-4	Cobalt	14.0	B		P
7440-50-8	Copper	35.5			P
7439-89-6	Iron	35500			P
7439-92-1	Lead	30.3		N	F
7439-95-4	Magnesium	6980			P
7439-96-5	Manganese	583			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	35.4			P
7440-09-7	Potassium	3420			A
7782-49-2	Selenium	4.0	U	E	F
7440-22-4	Silver	4.6			P
7440-23-5	Sodium	867	B		P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	72.5			P
7440-66-6	Zinc	143			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FY411

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ077

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 54 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	28	B
67-64-1	Acetone	120	B
75-15-0	Carbon Disulfide	22	U
75-35-4	1,1-Dichloroethene	22	U
75-34-3	1,1-Dichloroethane	22	U
540-59-0	1,2-Dichloroethene (total)	22	U
67-66-3	Chloroform	22	U
107-06-2	1,2-Dichloroethane	22	U
78-93-3	2-Butanone	23	
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
75-27-4	Bromodichloromethane	22	U
78-87-5	1,2-Dichloropropane	22	U
10061-02-6	cis-1,3-Dichloropropene	22	U
79-01-6	Trichloroethene	22	U
124-48-1	Dibromochloromethane	22	U
79-00-5	1,1,2-Trichloroethane	22	U
71-43-2	Benzene	22	U
10061-01-5	trans-1,3-Dichloropropene	22	U
75-25-2	Bromoform	22	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-88-3	Toluene	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U
100-42-5	Styrene	22	U
1330-20-7	Xylene (total)	22	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY411

ab Name: RECRA ENVIRON Contract: 68D20035

ab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ077

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 54 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.23	120	BJN

150

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY411

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG942

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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
95-50-1	1,2-Dichlorobenzene	710	U
95-48-7	2-Methylphenol	710	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	1700	U
91-58-7	2-Chloronaphthalene	710	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethyl Phthalate	710	U
208-96-8	Acenaphthylene	710	U
606-20-2	2,6-Dinitrotoluene	710	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	710	U

80

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY411

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG942

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	710	U
121-14-2	2,4-Dinitrotoluene	710	U
84-66-2	Diethylphthalate	710	U
7005-72-3	4-Chlorophenyl-phenylether	710	U
86-73-7	Fluorene	710	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-Methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	710	U
101-55-3	4-Bromophenyl-phenylether	710	U
118-74-1	Hexachlorobenzene	710	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	960	
120-12-7	Anthracene	140	J
86-74-8	Carbazole	710	U
84-74-2	Di-n-Butylphthalate	710	U
206-44-0	Fluoranthene	99	J
129-00-0	Pyrene	120	J
85-68-7	Butylbenzylphthalate	710	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)Anthracene	710	U
218-01-9	Chrysene	710	U
117-81-7	bis(2-Ethylhexyl)Phthalate	670	J
117-84-0	Di-n-Octyl Phthalate	710	U
205-99-2	Benzo(b)Fluoranthene	710	U
207-08-9	Benzo(k)Fluoranthene	710	U
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

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY411

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG942

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.87	1600	BJ
2.	4436-75-3	3-Hexene-2,5-dione	7.47	1800	JNB
3.		UNKNOWN	9.34	4700	J
4.		UNKNOWN TRIETHYLBENZENE	12.10	720	J
5.		UNKNOWN MW190 C14H22	14.88	430	J
6.		UNKNOWN AROMATIC	16.64	430	J
7.		UNKNOWN MW180 C14H12	16.67	360	J
8.		UNKNOWN MW218	17.10	720	J
9.		UNKNOWN MW182 C14H14	17.32	510	J
10.		UNKNOWN	18.68	1300	J
11.	604-88-6	Benzene, hexaethyl-	18.78	970	JN
12.		UNKNOWN MW180 C14H12	19.05	1700	J
13.		UNKNOWN MW238 C18H22	19.85	400	J
14.		UNKNOWN	19.96	430	J
15.		UNKNOWN MW238 C18H22	20.01	1200	J
16.		UNKNOWN MW238 C18H22	20.44	760	J
17.		UNKNOWN MW204 C16H12	20.87	580	J
18.		UNKNOWN	22.13	540	J
19.		UNKNOWN	22.54	430	J
20.		UNKNOWN	27.07	360	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY411

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004755

Sample wt/vol: 30.4 (g/mL) G Lab File ID:

% Moisture: 54 decanted: (Y/N) N Date Received: 10/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.6	U
319-85-7	beta-BHC	3.6	U
319-86-8	delta-BHC	3.6	U
58-89-9	gamma-BHC (Lindane)	3.6	U
76-44-8	Heptachlor	3.6	U
309-00-2	Aldrin	3.6	U
1024-57-3	Heptachlor epoxide	3.6	U
959-98-8	Endosulfan I	3.6	U
60-57-1	Dieldrin	7.1	U
72-55-9	4,4'-DDE	7.1	U
72-20-8	Endrin	1.3	JP
33213-65-9	Endosulfan II	7.1	U
72-54-8	4,4'-DDD	7.1	U
1031-07-8	Endosulfan sulfate	7.1	U
50-29-3	4,4'-DDT	7.1	U
72-43-5	Methoxychlor	36	U
53494-70-5	Endrin ketone	0.71	JP
7421-93-4	Endrin aldehyde	7.1	U
5103-71-9	alpha-Chlordane	3.6	U
5103-74-2	gamma-Chlordane	3.6	U
8001-35-2	Toxaphene	360	U
12674-11-2	Aroclor-1016	71	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	71	U
53469-21-9	Aroclor-1242	71	U
12672-29-6	Aroclor-1248	71	U
11097-69-1	Aroclor-1254	71	U
11096-82-5	Aroclor-1260	71	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ711

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5340S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 45.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31700			P
7440-36-0	Antimony	17.5	U		P
7440-38-2	Arsenic	26.9			F
7440-39-3	Barium	226			P
7440-41-7	Beryllium	2.3			P
7440-43-9	Cadmium	7.2			P
7440-70-2	Calcium	6530			P
7440-47-3	Chromium	50.8			P
7440-48-4	Cobalt	20.1	B		P
7440-50-8	Copper	51.1			P
7439-89-6	Iron	30000			P
7439-92-1	Lead	65.7		N	F
7439-95-4	Magnesium	6800			P
7439-96-5	Manganese	501			P
7439-97-6	Mercury	0.22	U		CV
7440-02-0	Nickel	33.1			P
7440-09-7	Potassium	2790			A
7782-49-2	Selenium	4.4	U	W	F
7440-22-4	Silver	3.1	U		P
7440-23-5	Sodium	564	B		P
7440-28-0	Thallium	1.3	U	WN	F
7440-62-2	Vanadium	65.8			P
7440-66-6	Zinc	163			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FY412

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ065

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 48 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	61	B
67-64-1	Acetone	320	
75-15-0	Carbon Disulfide	19	U
75-35-4	1,1-Dichloroethene	19	U
75-34-3	1,1-Dichloroethane	19	U
540-59-0	1,2-Dichloroethene (total)	19	U
67-66-3	Chloroform	19	U
107-06-2	1,2-Dichloroethane	19	U
78-93-3	2-Butanone	54	
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
75-27-4	Bromodichloromethane	19	U
78-87-5	1,2-Dichloropropane	19	U
10061-02-6	cis-1,3-Dichloropropene	19	U
79-01-6	Trichloroethene	19	U
124-48-1	Dibromochloromethane	19	U
79-00-5	1,1,2-Trichloroethane	19	U
71-43-2	Benzene	19	U
10061-01-5	trans-1,3-Dichloropropene	19	U
75-25-2	Bromoform	19	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
108-88-3	Toluene	19	U
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
1330-20-7	Xylene (total)	19	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY412

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ065

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 48 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.29	850	BJN

146

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY412

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG898

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl)Ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	630	U
106-46-7	1,4-Dichlorobenzene	630	U
95-50-1	1,2-Dichlorobenzene	630	U
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-Di-n-Propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy)Methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	630	U
91-20-3	Naphthalene	630	U
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	630	U
59-50-7	4-Chloro-3-Methylphenol	630	U
91-57-6	2-Methylnaphthalene	630	U
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethyl Phthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	630	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY412

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG898

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	630	U
121-14-2	2,4-Dinitrotoluene	630	U
84-66-2	Diethylphthalate	630	U
7005-72-3	4-Chlorophenyl-phenylether	630	U
86-73-7	Fluorene	630	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	630	U
101-55-3	4-Bromophenyl-phenylether	630	U
118-74-1	Hexachlorobenzene	630	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	630	U
120-12-7	Anthracene	630	U
86-74-8	Carbazole	630	U
84-74-2	Di-n-Butylphthalate	630	U
206-44-0	Fluoranthene	630	U
129-00-0	Pyrene	630	U
85-68-7	Butylbenzylphthalate	630	U
91-94-1	3,3'-Dichlorobenzidine	630	U
56-55-3	Benzo(a)Anthracene	630	U
218-01-9	Chrysene	630	U
117-81-7	bis(2-Ethylhexyl)Phthalate	630	U
117-84-0	Di-n-Octyl Phthalate	630	U
205-99-2	Benzo(b)Fluoranthene	630	U
207-08-9	Benzo(k)Fluoranthene	630	U
50-32-8	Benzo(a)Pyrene	630	U
193-39-5	Indeno(1,2,3-cd)Pyrene	630	U
53-70-3	Dibenz(a,h)Anthracene	630	U
191-24-2	Benzo(g,h,i)Perylene	630	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY412

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG898

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 17

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.99	190	J
2.	2216-33-3	Octane, 3-methyl-	6.05	250	BJN
3.		UNKNOWN	6.36	160	BJ
4.		UNKNOWN	6.99	1100	BJ
5.		UNKNOWN	7.24	160	J
6.	4436-75-3	3-Hexene-2,5-dione	7.59	730	BJN
7.		UNKNOWN	7.98	640	J
8.		UNKNOWN	8.36	2600	J
9.		UNKNOWN	8.69	220	J
10.		UNKNOWN	9.46	3100	J
11.		UNKNOWN HYDROCARBON	18.57	160	J
12.	10544-50-0	Sulfur, mol (S8)	22.39	12000	JN
13.		UNKNOWN	22.69	350	J
14.		UNKNOWN	26.47	250	J
15.		UNKNOWN HYDROCARBON	28.05	220	J
16.		UNKNOWN HYDROCARBON C29H60 M	29.55	700	J
17.		UNKNOWN HYDROCARBON	31.27	350	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY412

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004756

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

% Moisture: 48 decanted: (Y/N) N Date Received: 10/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.3	U
319-85-7	beta-BHC	3.3	U
319-86-8	delta-BHC	3.3	U
58-89-9	gamma-BHC (Lindane)	3.3	U
76-44-8	Heptachlor	3.3	U
309-00-2	Aldrin	3.3	U
1024-57-3	Heptachlor epoxide	3.3	U
959-98-8	Endosulfan I	3.3	U
60-57-1	Dieldrin	6.3	U
72-55-9	4,4'-DDE	6.3	U
72-20-8	Endrin	6.3	U
33213-65-9	Endosulfan II	6.3	U
72-54-8	4,4'-DDD	6.3	U
1031-07-8	Endosulfan sulfate	6.3	U
50-29-3	4,4'-DDT	6.3	U
72-43-5	Methoxychlor	33	U
53494-70-5	Endrin ketone	6.3	U
7421-93-4	Endrin aldehyde	6.3	U
5103-71-9	alpha-Chlordane	3.3	U
5103-74-2	gamma-Chlordane	3.3	U
8001-35-2	Toxaphene	330	U
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	63	U
11097-69-1	Aroclor-1254	63	U
11096-82-5	Aroclor-1260	63	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ712

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5341S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 49.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21500			P
7440-36-0	Antimony	16.1	U		P
7440-38-2	Arsenic	17.7			F
7440-39-3	Barium	189			P
7440-41-7	Beryllium	1.8	B		P
7440-43-9	Cadmium	3.1			P
7440-70-2	Calcium	7020			P
7440-47-3	Chromium	30.4			P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	23.2			P
7439-89-6	Iron	22500			P
7439-92-1	Lead	28.5		+N	F
7439-95-4	Magnesium	5850			P
7439-96-5	Manganese	495			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	31.7			P
7440-09-7	Potassium	2800			A
7782-49-2	Selenium	4.0	U	W	F
7440-22-4	Silver	8.0			P
7440-23-5	Sodium	455	B		P
7440-28-0	Thallium	1.2	U	WN	F
7440-62-2	Vanadium	53.0			P
7440-66-6	Zinc	113			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY413

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ066

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 35 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	68	B
67-64-1	Acetone	120	
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-66-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	22	
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-02-6	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-01-5	trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-88-3	Toluene	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Xylene (total)	15	U

159

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY413

ab Name: RECRA ENVIRON Contract: 68D20035

ab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ066

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 35 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.26	1200	BJN

100

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FY413

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG899

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	500	U
111-44-4	bis(2-Chloroethyl)Ether	500	U
95-57-8	2-Chlorophenol	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
95-50-1	1,2-Dichlorobenzene	500	U
95-48-7	2-Methylphenol	500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	500	U
106-44-5	4-Methylphenol	500	U
621-64-7	N-Nitroso-Di-n-Propylamine	500	U
67-72-1	Hexachloroethane	500	U
98-95-3	Nitrobenzene	500	U
78-59-1	Isophorone	500	U
88-75-5	2-Nitrophenol	500	U
105-67-9	2,4-Dimethylphenol	500	U
111-91-1	bis(2-Chloroethoxy)Methane	500	U
120-83-2	2,4-Dichlorophenol	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
91-20-3	Naphthalene	500	U
106-47-8	4-Chloroaniline	500	U
87-68-3	Hexachlorobutadiene	500	U
59-50-7	4-Chloro-3-Methylphenol	500	U
91-57-6	2-Methylnaphthalene	500	U
77-47-4	Hexachlorocyclopentadiene	500	U
88-06-2	2,4,6-Trichlorophenol	500	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	500	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethyl Phthalate	500	U
208-96-8	Acenaphthylene	500	U
606-20-2	2,6-Dinitrotoluene	500	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY413

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG899

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1200	U
100-02-7	4-Nitrophenol	1200	U
132-64-9	Dibenzofuran	500	U
121-14-2	2,4-Dinitrotoluene	500	U
84-66-2	Diethylphthalate	500	U
7005-72-3	4-Chlorophenyl-phenylether	500	U
86-73-7	Fluorene	500	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-Methylphenol	1200	U
86-30-6	N-Nitrosodiphenylamine (1)	500	U
101-55-3	4-Bromophenyl-phenylether	500	U
118-74-1	Hexachlorobenzene	500	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	500	U
120-12-7	Anthracene	500	U
86-74-8	Carbazole	500	U
84-74-2	Di-n-Butylphthalate	500	U
206-44-0	Fluoranthene	36	J
129-00-0	Pyrene	33	J
85-68-7	Butylbenzylphthalate	500	U
91-94-1	3,3'-Dichlorobenzidine	500	U
56-55-3	Benzo(a)Anthracene	500	U
218-01-9	Chrysene	500	U
117-81-7	bis(2-Ethylhexyl)Phthalate	500	U
117-84-0	Di-n-Octyl Phthalate	500	U
205-99-2	Benzo(b)Fluoranthene	500	U
207-08-9	Benzo(k)Fluoranthene	500	U
50-32-8	Benzo(a)Pyrene	500	U
193-39-5	Indeno(1,2,3-cd)Pyrene	500	U
53-70-3	Dibenz(a,h)Anthracene	500	U
191-24-2	Benzo(g,h,i)Perylene	500	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY413

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG899

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 35 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.99	180	J
2.	2216-33-3	Octane, 3-methyl-	6.05	330	BJN
3.		UNKNOWN	6.37	150	BJ
4.		UNKNOWN	7.01	1400	BJ
5.		UNKNOWN	7.25	200	J
6.	4436-75-3	3-Hexene-2,5-dione	7.59	910	BJN
7.		UNKNOWN	7.99	760	J
8.		UNKNOWN	8.37	3300	J
9.		UNKNOWN	8.69	330	J
10.		UNKNOWN	9.49	3800	J
11.		UNKNOWN HYDROCARBON	18.56	180	J
12.		UNKNOWN HYDROCARBON	18.64	130	J
13.		UNKNOWN	20.01	150	J
14.	10544-50-0	Sulfur, mol (S8)	22.40	8900	JN
15.		UNKNOWN	22.69	200	J
16.		UNKNOWN HYDROCARBON	26.46	460	J
17.		UNKNOWN HYDROCARBON	28.06	560	J
18.		UNKNOWN	28.56	300	J
19.		UNKNOWN HYDROCARBON C29H60	29.55	1400	J
20.		UNKNOWN HYDROCARBON	31.27	530	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY413

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004757

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

% Moisture: 35 decanted: (Y/N) N Date Received: 10/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.6	U
319-85-7	beta-BHC	2.6	U
319-86-8	delta-BHC	2.6	U
58-89-9	gamma-BHC (Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	2.6	U
1024-57-3	Heptachlor epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.0	U
72-55-9	4,4'-DDE	5.0	U
72-20-8	Endrin	5.0	U
33213-65-9	Endosulfan II	5.0	U
72-54-8	4,4'-DDD	5.0	U
1031-07-8	Endosulfan sulfate	5.0	U
50-29-3	4,4'-DDT	5.0	U
72-43-5	Methoxychlor	26	U
53494-70-5	Endrin ketone	5.0	U
7421-93-4	Endrin aldehyde	5.0	U
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260	U
12674-11-2	Aroclor-1016	50	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	50	U
53469-21-9	Aroclor-1242	50	U
12672-29-6	Aroclor-1248	50	U
11097-69-1	Aroclor-1254	50	U
11096-82-5	Aroclor-1260	50	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ713

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5342S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 64.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10300			P
7440-36-0	Antimony	12.4	U		P
7440-38-2	Arsenic	12.9		S	F
7440-39-3	Barium	116			P
7440-41-7	Beryllium	0.94	B		P
7440-43-9	Cadmium	1.5	B		P
7440-70-2	Calcium	5830			P
7440-47-3	Chromium	16.5			P
7440-48-4	Cobalt	7.3	B		P
7440-50-8	Copper	14.0			P
7439-89-6	Iron	15800			P
7439-92-1	Lead	14.9		N	F
7439-95-4	Magnesium	4130			P
7439-96-5	Manganese	387			P
7439-97-6	Mercury	0.16	U		CV
7440-02-0	Nickel	17.6			P
7440-09-7	Potassium	1050	B		A
7782-49-2	Selenium	3.1	U	E	F
7440-22-4	Silver	5.5			P
7440-23-5	Sodium	244	B		P
7440-28-0	Thallium	0.93	U	WN	F
7440-62-2	Vanadium	27.0			P
7440-66-6	Zinc	74.0			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY414

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ079

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 61 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	26	U
74-83-9	Bromomethane	26	U
75-01-4	Vinyl Chloride	26	U
75-00-3	Chloroethane	26	U
75-09-2	Methylene Chloride	54	B
67-64-1	Acetone	310	B
75-15-0	Carbon Disulfide	26	U
75-35-4	1,1-Dichloroethene	26	U
75-34-3	1,1-Dichloroethane	26	U
540-59-0	1,2-Dichloroethene (total)	26	U
67-66-3	Chloroform	26	U
107-06-2	1,2-Dichloroethane	26	U
78-93-3	2-Butanone	62	
71-55-6	1,1,1-Trichloroethane	26	U
56-23-5	Carbon Tetrachloride	26	U
75-27-4	Bromodichloromethane	26	U
78-87-5	1,2-Dichloropropane	26	U
10061-02-6	cis-1,3-Dichloropropene	26	U
79-01-6	Trichloroethene	26	U
124-48-1	Dibromochloromethane	26	U
79-00-5	1,1,2-Trichloroethane	26	U
71-43-2	Benzene	26	U
10061-01-5	trans-1,3-Dichloropropene	26	U
75-25-2	Bromoform	26	U
108-10-1	4-Methyl-2-Pentanone	26	U
591-78-6	2-Hexanone	26	U
127-18-4	Tetrachloroethene	26	U
79-34-5	1,1,2,2-Tetrachloroethane	26	U
108-88-3	Toluene	26	U
108-90-7	Chlorobenzene	26	U
100-41-4	Ethylbenzene	26	U
100-42-5	Styrene	26	U
1330-20-7	Xylene (total)	26	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY414

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ079

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 61 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.27	920	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY414

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG900

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	840	U
111-44-4	bis(2-Chloroethyl)Ether	840	U
95-57-8	2-Chlorophenol	840	U
541-73-1	1,3-Dichlorobenzene	840	U
106-46-7	1,4-Dichlorobenzene	840	U
95-50-1	1,2-Dichlorobenzene	160	J
95-48-7	2-Methylphenol	840	U
108-60-1	2,2'-oxybis(1-Chloropropane)	840	U
106-44-5	4-Methylphenol	840	U
621-64-7	N-Nitroso-Di-n-Propylamine	840	U
67-72-1	Hexachloroethane	840	U
98-95-3	Nitrobenzene	840	U
78-59-1	Isophorone	840	U
88-75-5	2-Nitrophenol	840	U
105-67-9	2,4-Dimethylphenol	840	U
111-91-1	bis(2-Chloroethoxy)Methane	840	U
120-83-2	2,4-Dichlorophenol	840	U
120-82-1	1,2,4-Trichlorobenzene	840	U
91-20-3	Naphthalene	840	U
106-47-8	4-Chloroaniline	840	U
87-68-3	Hexachlorobutadiene	840	U
59-50-7	4-Chloro-3-Methylphenol	840	U
91-57-6	2-Methylnaphthalene	840	U
77-47-4	Hexachlorocyclopentadiene	840	U
88-06-2	2,4,6-Trichlorophenol	840	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	840	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	840	U
208-96-8	Acenaphthylene	840	U
606-20-2	2,6-Dinitrotoluene	840	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	840	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY414

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG900

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	840	U
121-14-2	2,4-Dinitrotoluene	840	U
84-66-2	Diethylphthalate	840	U
7005-72-3	4-Chlorophenyl-phenylether	840	U
86-73-7	Fluorene	840	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	840	U
101-55-3	4-Bromophenyl-phenylether	840	U
118-74-1	Hexachlorobenzene	840	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	190	J
120-12-7	Anthracene	840	U
86-74-8	Carbazole	840	U
84-74-2	Di-n-Butylphthalate	840	U
206-44-0	Fluoranthene	92	J
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	840	U
91-94-1	3,3'-Dichlorobenzidine	840	U
56-55-3	Benzo(a)Anthracene	67	J
218-01-9	Chrysene	100	J
117-81-7	bis(2-Ethylhexyl)Phthalate	510	J
117-84-0	Di-n-Octyl Phthalate	840	U
205-99-2	Benzo(b)Fluoranthene	840	U
207-08-9	Benzo(k)Fluoranthene	840	U
50-32-8	Benzo(a)Pyrene	840	U
193-39-5	Indeno(1,2,3-cd)Pyrene	840	U
53-70-3	Dibenz(a,h)Anthracene	840	U
191-24-2	Benzo(g,h,i)Perylene	840	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY414

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

Sample wt/vol: 30.1 (g/mL) G Lab File ID: BG900

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.02	2900	BJ
2.		UNKNOWN	7.26	770	J
3.	4436-75-3	3-Hexene-2,5-dione	7.60	2200	BJN
4.		UNKNOWN	8.38	6400	J
5.		UNKNOWN	9.40	1700	J
6.		UNKNOWN	9.52	6000	J
7.		UNKNOWN TRIMETHYLBENZENE	12.25	680	J
8.		UNKNOWN	17.78	1000	J
9.		UNKNOWN HYDROCARBON	18.58	1100	J
10.		UNKNOWN HYDROCARBON	18.64	1000	J
11.		UNKNOWN	18.85	940	J
12.		UNKNOWN	18.98	1000	J
13.		UNKNOWN	19.05	1300	J
14.		UNKNOWN	19.15	850	J
15.		UNKNOWN	19.45	810	J
16.		UNKNOWN	19.53	890	J
17.		UNKNOWN	19.85	940	J
18.	10544-50-0	Sulfur, mol (S8)	22.41	26000	JN
19.		UNKNOWN	22.71	720	J
20.		UNKNOWN MW252	23.86	7200	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY414

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004758

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

% Moisture: 61 decanted: (Y/N) N Date Received: 10/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.4	U
319-85-7	beta-BHC	4.4	U
319-86-8	delta-BHC	4.4	U
58-89-9	gamma-BHC (Lindane)	4.4	U
76-44-8	Heptachlor	4.4	U
309-00-2	Aldrin	4.4	U
1024-57-3	Heptachlor epoxide	4.4	U
959-98-8	Endosulfan I	4.4	U
60-57-1	Dieldrin	8.5	U
72-55-9	4,4'-DDE	8.5	U
72-20-8	Endrin	8.5	U
33213-65-9	Endosulfan II	8.5	U
72-54-8	4,4'-DDD	8.5	U
1031-07-8	Endosulfan sulfate	8.5	U
50-29-3	4,4'-DDT	8.5	U
72-43-5	Methoxychlor	44	U
53494-70-5	Endrin ketone	8.5	U
7421-93-4	Endrin aldehyde	8.5	U
5103-71-9	alpha-Chlordane	4.4	U
5103-74-2	gamma-Chlordane	4.4	U
8001-35-2	Toxaphene	440	U
12674-11-2	Aroclor-1016	85	U
11104-28-2	Aroclor-1221	170	U
11141-16-5	Aroclor-1232	85	U
53469-21-9	Aroclor-1242	85	U
12672-29-6	Aroclor-1248	120	P
11097-69-1	Aroclor-1254	130	
11096-82-5	Aroclor-1260	85	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ714

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5343S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 39.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27300			P
7440-36-0	Antimony	20.3	U		P
7440-38-2	Arsenic	27.1			F
7440-39-3	Barium	254			P
7440-41-7	Beryllium	2.3	B		P
7440-43-9	Cadmium	7.5			P
7440-70-2	Calcium	5930			P
7440-47-3	Chromium	79.6			P
7440-48-4	Cobalt	12.8	B		P
7440-50-8	Copper	34.4			P
7439-89-6	Iron	29500			P
7439-92-1	Lead	84.3		SN	F
7439-95-4	Magnesium	5690			P
7439-96-5	Manganese	585			P
7439-97-6	Mercury	0.25	U		CV
7440-02-0	Nickel	37.9			P
7440-09-7	Potassium	2470	B		A
7782-49-2	Selenium	5.1	U	W	F
7440-22-4	Silver	11.8			P
7440-23-5	Sodium	822	B		P
7440-28-0	Thallium	1.5	U	WN	F
7440-62-2	Vanadium	62.5			P
7440-66-6	Zinc	178			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ068

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 57 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	120	B
67-64-1	Acetone	470	
75-15-0	Carbon Disulfide	23	U
75-35-4	1,1-Dichloroethene	23	U
75-34-3	1,1-Dichloroethane	23	U
540-59-0	1,2-Dichloroethene (total)	23	U
67-66-3	Chloroform	23	U
107-06-2	1,2-Dichloroethane	23	U
78-93-3	2-Butanone	93	
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
75-27-4	Bromodichloromethane	23	U
78-87-5	1,2-Dichloropropane	23	U
10061-02-6	cis-1,3-Dichloropropene	23	U
79-01-6	Trichloroethene	23	U
124-48-1	Dibromochloromethane	23	U
79-00-5	1,1,2-Trichloroethane	23	U
71-43-2	Benzene	23	U
10061-01-5	trans-1,3-Dichloropropene	23	U
75-25-2	Bromoform	23	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
108-88-3	Toluene	23	U
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U
100-42-5	Styrene	23	U
1330-20-7	Xylene (total)	23	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ068

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: not dec. 57 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.27	400	BJN

197

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG901

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	760	U
111-44-4	bis(2-Chloroethyl)Ether	760	U
95-57-8	2-Chlorophenol	760	U
541-73-1	1,3-Dichlorobenzene	760	U
106-46-7	1,4-Dichlorobenzene	760	U
95-50-1	1,2-Dichlorobenzene	760	U
95-48-7	2-Methylphenol	760	U
108-60-1	2,2'-oxybis(1-Chloropropane)	760	U
106-44-5	4-Methylphenol	760	U
621-64-7	N-Nitroso-Di-n-Propylamine	760	U
67-72-1	Hexachloroethane	760	U
98-95-3	Nitrobenzene	760	U
78-59-1	Isophorone	760	U
88-75-5	2-Nitrophenol	760	U
105-67-9	2,4-Dimethylphenol	760	U
111-91-1	bis(2-Chloroethoxy)Methane	760	U
120-83-2	2,4-Dichlorophenol	760	U
120-82-1	1,2,4-Trichlorobenzene	760	U
91-20-3	Naphthalene	760	U
106-47-8	4-Chloroaniline	760	U
87-68-3	Hexachlorobutadiene	760	U
59-50-7	4-Chloro-3-Methylphenol	760	U
91-57-6	2-Methylnaphthalene	760	U
77-47-4	Hexachlorocyclopentadiene	760	U
88-06-2	2,4,6-Trichlorophenol	760	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	760	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	760	U
208-96-8	Acenaphthylene	760	U
606-20-2	2,6-Dinitrotoluene	760	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	760	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG901

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	760	U
121-14-2	2,4-Dinitrotoluene	760	U
84-66-2	Diethylphthalate	760	U
7005-72-3	4-Chlorophenyl-phenylether	760	U
86-73-7	Fluorene	760	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	760	U
101-55-3	4-Bromophenyl-phenylether	760	U
118-74-1	Hexachlorobenzene	760	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	41	J
120-12-7	Anthracene	760	U
86-74-8	Carbazole	760	U
84-74-2	Di-n-Butylphthalate	760	U
206-44-0	Fluoranthene	73	J
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	310	J
91-94-1	3,3'-Dichlorobenzidine	760	U
56-55-3	Benzo(a)Anthracene	53	J
218-01-9	Chrysene	100	J
117-81-7	bis(2-Ethylhexyl)Phthalate	140	J
117-84-0	Di-n-Octyl Phthalate	760	U
205-99-2	Benzo(b)Fluoranthene	760	U
207-08-9	Benzo(k)Fluoranthene	760	U
50-32-8	Benzo(a)Pyrene	760	U
193-39-5	Indeno(1,2,3-cd)Pyrene	760	U
53-70-3	Dibenz(a,h)Anthracene	760	U
191-24-2	Benzo(g,h,i)Perylene	760	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG901

Level: (low/med) LOW Date Received: 10/23/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/24/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/27/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.02	2300	BJ
2.		UNKNOWN MW136 C10H16	7.31	1500	J
3.	4436-75-3	3-Hexene-2,5-dione	7.60	1800	BJN
4.		UNKNOWN	8.37	5000	J
5.		UNKNOWN	9.39	1500	J
6.		UNKNOWN	9.49	3800	J
7.		UNKNOWN MW204 C15H24	15.22	310	J
8.		UNKNOWN MW204 C15H24	15.44	1700	J
9.		UNKNOWN	16.48	340	J
10.		UNKNOWN MW204 C15H24	16.66	150	J
11.		UNKNOWN HYDROCARBON	18.57	690	J
12.		UNKNOWN	22.23	880	J
13.		UNKNOWN	22.69	1300	J
14.		UNKNOWN	22.87	570	J
15.		UNKNOWN MW252	23.87	9200	J
16.		UNKNOWN	24.21	1300	J
17.		UNKNOWN	25.15	2100	J
18.		UNKNOWN	25.62	2900	J
19.		UNKNOWN	26.91	1300	J
20.		UNKNOWN	28.57	1200	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY415

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY401

Matrix: (soil/water) SOIL Lab Sample ID: BS004759

Sample wt/vol: 30.3 (g/mL) G Lab File ID:

% Moisture: 57 decanted: (Y/N) N Date Received: 10/23/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/24/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 10/28/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.9	U
319-85-7	beta-BHC	3.9	U
319-86-8	delta-BHC	3.9	U
58-89-9	gamma-BHC (Lindane)	3.9	U
76-44-8	Heptachlor	3.9	U
309-00-2	Aldrin	3.9	U
1024-57-3	Heptachlor epoxide	3.9	U
959-98-8	Endosulfan I	3.9	U
60-57-1	Dieldrin	7.6	U
72-55-9	4,4'-DDE	7.6	U
72-20-8	Endrin	7.6	U
33213-65-9	Endosulfan II	7.6	U
72-54-8	4,4'-DDD	7.6	U
1031-07-8	Endosulfan sulfate	7.6	U
50-29-3	4,4'-DDT	7.6	U
72-43-5	Methoxychlor	39	U
53494-70-5	Endrin ketone	7.6	U
7421-93-4	Endrin aldehyde	7.6	U
5103-71-9	alpha-Chlordane	3.9	U
5103-74-2	gamma-Chlordane	3.9	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	76	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	76	U
53469-21-9	Aroclor-1242	76	U
12672-29-6	Aroclor-1248	94	P
11097-69-1	Aroclor-1254	89	
11096-82-5	Aroclor-1260	76	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ715

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): SOIL Lab Sample ID: 5344S

Level (low/med): LOW Date Received: 10/23/92

% Solids: 40.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26200			P
7440-36-0	Antimony	20.0	U		P
7440-38-2	Arsenic	25.2			F
7440-39-3	Barium	214			P
7440-41-7	Beryllium	2.3	B		P
7440-43-9	Cadmium	7.3			P
7440-70-2	Calcium	5690			P
7440-47-3	Chromium	36.5			P
7440-48-4	Cobalt	13.8	B		P
7440-50-8	Copper	37.0			P
7439-89-6	Iron	22900			P
7439-92-1	Lead	98.5		N	F
7439-95-4	Magnesium	4970			P
7439-96-5	Manganese	385			P
7439-97-6	Mercury	0.25	U		CV
7440-02-0	Nickel	36.4			P
7440-09-7	Potassium	2160	B		A
7782-49-2	Selenium	5.0	U	E	F
7440-22-4	Silver	9.1			P
7440-23-5	Sodium	932	B		P
7440-28-0	Thallium	1.5	U	WN	F
7440-62-2	Vanadium	56.1			P
7440-66-6	Zinc	158			P
	Cyanide				NR

Color Before: GRAY Clarity Before: Texture: CLEAR

Color After: COLORLESS Clarity After: Artifacts:

Comments:

000016

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY416

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ071

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 61 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	26	U
74-83-9	Bromomethane	26	U
75-01-4	Vinyl Chloride	26	U
75-00-3	Chloroethane	26	U
75-09-2	Methylene Chloride	390	B
67-64-1	Acetone	900	E
75-15-0	Carbon Disulfide	26	U
75-35-4	1,1-Dichloroethene	26	U
75-34-3	1,1-Dichloroethane	26	U
540-59-0	1,2-Dichloroethene (total)	26	U
67-66-3	Chloroform	26	U
107-06-2	1,2-Dichloroethane	26	U
78-93-3	2-Butanone	120	
71-55-6	1,1,1-Trichloroethane	26	U
56-23-5	Carbon Tetrachloride	26	U
75-27-4	Bromodichloromethane	26	U
78-87-5	1,2-Dichloropropane	26	U
10061-02-6	cis-1,3-Dichloropropene	26	U
79-01-6	Trichloroethene	26	U
124-48-1	Dibromochloromethane	26	U
79-00-5	1,1,2-Trichloroethane	26	U
71-43-2	Benzene	26	U
10061-01-5	trans-1,3-Dichloropropene	26	U
75-25-2	Bromoform	26	U
108-10-1	4-Methyl-2-Pentanone	26	U
591-78-6	2-Hexanone	26	U
127-18-4	Tetrachloroethene	26	U
79-34-5	1,1,2,2-Tetrachloroethane	26	U
108-88-3	Toluene	26	U
108-90-7	Chlorobenzene	26	U
100-41-4	Ethylbenzene	26	U
100-42-5	Styrene	26	U
1330-20-7	Xylene (total)	26	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY416

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ071

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 61 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.27	900	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY416

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG950

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	840	U
111-44-4	bis(2-Chloroethyl)Ether	840	U
95-57-8	2-Chlorophenol	840	U
541-73-1	1,3-Dichlorobenzene	840	U
106-46-7	1,4-Dichlorobenzene	840	U
95-50-1	1,2-Dichlorobenzene	840	U
95-48-7	2-Methylphenol	840	U
108-60-1	2,2'-oxybis(1-Chloropropane)	840	U
106-44-5	4-Methylphenol	840	U
621-64-7	N-Nitroso-Di-n-Propylamine	840	U
67-72-1	Hexachloroethane	840	U
98-95-3	Nitrobenzene	840	U
78-59-1	Isophorone	840	U
88-75-5	2-Nitrophenol	840	U
105-67-9	2,4-Dimethylphenol	840	U
111-91-1	bis(2-Chloroethoxy)Methane	840	U
120-83-2	2,4-Dichlorophenol	840	U
120-82-1	1,2,4-Trichlorobenzene	840	U
91-20-3	Naphthalene	840	U
106-47-8	4-Chloroaniline	840	U
87-68-3	Hexachlorobutadiene	840	U
59-50-7	4-Chloro-3-Methylphenol	840	U
91-57-6	2-Methylnaphthalene	840	U
77-47-4	Hexachlorocyclopentadiene	840	U
88-06-2	2,4,6-Trichlorophenol	840	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	840	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethyl Phthalate	840	U
208-96-8	Acenaphthylene	840	U
606-20-2	2,6-Dinitrotoluene	840	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	840	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY416

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG950

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	840	U
121-14-2	2,4-Dinitrotoluene	840	U
84-66-2	Diethylphthalate	840	U
7005-72-3	4-Chlorophenyl-phenylether	840	U
86-73-7	Fluorene	840	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	840	U
101-55-3	4-Bromophenyl-phenylether	840	U
118-74-1	Hexachlorobenzene	840	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	840	U
120-12-7	Anthracene	840	U
86-74-8	Carbazole	840	U
84-74-2	Di-n-Butylphthalate	840	U
206-44-0	Fluoranthene	840	U
129-00-0	Pyrene	840	U
85-68-7	Butylbenzylphthalate	840	U
91-94-1	3,3'-Dichlorobenzidine	840	U
56-55-3	Benzo(a)Anthracene	840	U
218-01-9	Chrysene	840	U
117-81-7	bis(2-Ethylhexyl)Phthalate	840	U
117-84-0	Di-n-Octyl Phthalate	840	U
205-99-2	Benzo(b)Fluoranthene	840	U
207-08-9	Benzo(k)Fluoranthene	840	U
50-32-8	Benzo(a)Pyrene	840	U
193-39-5	Indeno(1,2,3-cd)Pyrene	840	U
53-70-3	Dibenz(a,h)Anthracene	840	U
191-24-2	Benzo(g,h,i)Perylene	840	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY416

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG950

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

Number TICs found: 21

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2216-33-	Octane, 3-methyl-	5.90	430	BJN
2.		UNKNOWN	6.85	2000	BJ
3.	4436-75-	3-Hexene-2,5-dione	7.45	2400	BJN
4.		UNKNOWN	8.53	380	BJ
5.		UNKNOWN	9.22	890	J
6.		UNKNOWN	9.30	4700	J
7.		UNKNOWN	11.30	170	J
8.		UNKNOWN	19.46	340	J
9.		UNKNOWN	19.81	380	J
10.	10544-50-	Sulfur, mol. (S8)	22.49	24000	JN
11.		UNKNOWN	22.50	1100	J
12.		UNKNOWN MW252	23.64	3500	J
13.		UNKNOWN MW252	23.98	890	J
14.		UNKNOWN	25.45	1400	J
15.		UNKNOWN HYDROCARBON	26.26	680	J
16.		UNKNOWN	26.67	680	J
17.		UNKNOWN HYDROCARBON	27.86	550	J
18.		UNKNOWN	29.14	2200	J
19.		UNKNOWN HYDROCARBON MW408 C2	29.34	1400	J
20.		UNKNOWN HYDROCARBON	30.99	1200	J
21.		UNKNOWN	35.71	1000	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY416

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004773

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

% Moisture: 61 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.6 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.3	U
319-85-7	beta-BHC	4.3	U
319-86-8	delta-BHC	4.3	U
58-89-9	gamma-BHC (Lindane)	4.3	U
76-44-8	Heptachlor	4.3	U
309-00-2	Aldrin	4.3	U
1024-57-3	Heptachlor epoxide	4.3	U
959-98-8	Endosulfan I	11	P
60-57-1	Dieldrin	8.4	U
72-55-9	4,4'-DDE	2.3	J
72-20-8	Endrin	8.4	U
33213-65-9	Endosulfan II	8.4	U
72-54-8	4,4'-DDD	8.4	U
1031-07-8	Endosulfan sulfate	8.4	U
50-29-3	4,4'-DDT	8.4	U
72-43-5	Methoxychlor	43	U
53494-70-5	Endrin ketone	8.4	U
7421-93-4	Endrin aldehyde	8.4	U
5103-71-9	alpha-Chlordane	4.3	U
5103-74-2	gamma-Chlordane	4.3	U
8001-35-2	Toxaphene	430	U
12674-11-2	Aroclor-1016	84	U
11104-28-2	Aroclor-1221	170	U
11141-16-5	Aroclor-1232	84	U
53469-21-9	Aroclor-1242	84	U
12672-29-6	Aroclor-1248	84	U
11097-69-1	Aroclor-1254	84	U
11096-82-5	Aroclor-1260	84	U

600

EPA SAMPLE NO.

MFZ716

INORGANIC ANALYSIS DATA SHEET

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5346S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 39.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30500			P
7440-36-0	Antimony	29.2	B		P
7440-38-2	Arsenic	49.4			F
7440-39-3	Barium	344			P
7440-41-7	Beryllium	1.9	B		P
7440-43-9	Cadmium	38.0			P
7440-70-2	Calcium	3850			P
7440-47-3	Chromium	48.8			P
7440-48-4	Cobalt	14.8	B		P
7440-50-8	Copper	66.4			P
7439-89-6	Iron	26800			P
7439-92-1	Lead	172			P
7439-95-4	Magnesium	3650			P
7439-96-5	Manganese	797			P
7439-97-6	Mercury	0.25	U		CV
7440-02-0	Nickel	26.1			P
7440-09-7	Potassium	2060	B		A
7782-49-2	Selenium	0.86	B	WN	F
7440-22-4	Silver	8.6			P
7440-23-5	Sodium	528	B		P
7440-28-0	Thallium	1.6	B		F
7440-62-2	Vanadium	53.2			P
7440-66-6	Zinc	285			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY417

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ100

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 59 Date Analyzed: 10/29/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24	U
74-83-9	Bromomethane	24	U
75-01-4	Vinyl Chloride	24	U
75-00-3	Chloroethane	24	U
75-09-2	Methylene Chloride	30	B
67-64-1	Acetone	360	
75-15-0	Carbon Disulfide	24	U
75-35-4	1,1-Dichloroethene	24	U
75-34-3	1,1-Dichloroethane	24	U
540-59-0	1,2-Dichloroethene (total)	24	U
67-66-3	Chloroform	24	U
107-06-2	1,2-Dichloroethane	24	U
78-93-3	2-Butanone	24	U
71-55-6	1,1,1-Trichloroethane	24	U
56-23-5	Carbon Tetrachloride	24	U
75-27-4	Bromodichloromethane	24	U
78-87-5	1,2-Dichloropropane	24	U
10061-02-6	cis-1,3-Dichloropropene	24	U
79-01-6	Trichloroethene	24	U
124-48-1	Dibromochloromethane	24	U
79-00-5	1,1,2-Trichloroethane	24	U
71-43-2	Benzene	24	U
10061-01-5	trans-1,3-Dichloropropene	24	U
75-25-2	Bromoform	24	U
108-10-1	4-Methyl-2-Pentanone	24	U
591-78-6	2-Hexanone	24	U
127-18-4	Tetrachloroethene	24	U
79-34-5	1,1,2,2-Tetrachloroethane	24	U
108-88-3	Toluene	24	U
108-90-7	Chlorobenzene	24	U
100-41-4	Ethylbenzene	24	U
100-42-5	Styrene	24	U
1330-20-7	Xylene (total)	24	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY417

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ100

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 59 Date Analyzed: 10/29/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.28	800	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY417

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG951

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 59 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	790	U
111-44-4	bis(2-Chloroethyl)Ether	790	U
95-57-8	2-Chlorophenol	790	U
541-73-1	1,3-Dichlorobenzene	790	U
106-46-7	1,4-Dichlorobenzene	790	U
95-50-1	1,2-Dichlorobenzene	790	U
95-48-7	2-Methylphenol	790	U
108-60-1	2,2'-oxybis(1-Chloropropane)	790	U
106-44-5	4-Methylphenol	790	U
621-64-7	N-Nitroso-Di-n-Propylamine	790	U
67-72-1	Hexachloroethane	790	U
98-95-3	Nitrobenzene	790	U
78-59-1	Isophorone	790	U
88-75-5	2-Nitrophenol	790	U
105-67-9	2,4-Dimethylphenol	790	U
111-91-1	bis(2-Chloroethoxy)Methane	790	U
120-83-2	2,4-Dichlorophenol	790	U
120-82-1	1,2,4-Trichlorobenzene	790	U
91-20-3	Naphthalene	790	U
106-47-8	4-Chloroaniline	790	U
87-68-3	Hexachlorobutadiene	790	U
59-50-7	4-Chloro-3-Methylphenol	790	U
91-57-6	2-Methylnaphthalene	790	U
77-47-4	Hexachlorocyclopentadiene	790	U
88-06-2	2,4,6-Trichlorophenol	790	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	790	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	790	U
208-96-8	Acenaphthylene	790	U
606-20-2	2,6-Dinitrotoluene	790	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	790	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY417

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG951

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 59 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	790	U
121-14-2	2,4-Dinitrotoluene	790	U
84-66-2	Diethylphthalate	790	U
7005-72-3	4-Chlorophenyl-phenylether	790	U
86-73-7	Fluorene	790	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	790	U
101-55-3	4-Bromophenyl-phenylether	790	U
118-74-1	Hexachlorobenzene	790	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	790	U
120-12-7	Anthracene	790	U
86-74-8	Carbazole	790	U
84-74-2	Di-n-Butylphthalate	790	U
206-44-0	Fluoranthene	790	U
129-00-0	Pyrene	53	J
85-68-7	Butylbenzylphthalate	790	U
91-94-1	3,3'-Dichlorobenzidine	790	U
56-55-3	Benzo(a)Anthracene	790	U
218-01-9	Chrysene	790	U
117-81-7	bis(2-Ethylhexyl)Phthalate	790	U
117-84-0	Di-n-Octyl Phthalate	790	U
205-99-2	Benzo(b)Fluoranthene	790	U
207-08-9	Benzo(k)Fluoranthene	790	U
50-32-8	Benzo(a)Pyrene	790	U
193-39-5	Indeno(1,2,3-cd)Pyrene	790	U
53-70-3	Dibenz(a,h)Anthracene	790	U
191-24-2	Benzo(g,h,i)Perylene	790	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY417

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

Sample wt/vol: 30.4 (g/mL) G Lab File ID: BG951

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 59 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 19

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.86	2200	BJ
2.	4436-75-3	3-Hexene-2,5-dione	7.46	3000	BJN
3.		UNKNOWN	8.53	760	BJ
4.		UNKNOWN	9.24	1400	J
5.		UNKNOWN	9.33	3300	J
6.		UNKNOWN HYDROCARBON	18.39	360	J
7.		UNKNOWN	19.80	440	J
8.	10544-50-0	Sulfur, mol. (S8)	22.16	27000	JN
9.		UNKNOWN	22.50	760	J
10.		UNKNOWN	23.64	1100	J
11.		UNKNOWN	25.46	1200	J
12.		UNKNOWN HYDROCARBON	26.26	1900	J
13.		UNKNOWN	26.69	1800	J
14.		UNKNOWN	26.80	1800	J
15.		UNKNOWN	29.10	1800	J
16.		UNKNOWN HYDROCARBON	29.34	1200	J
17.		UNKNOWN HYDROCARBON	30.99	1000	J
18.		UNKNOWN	33.38	960	J
19.		UNKNOWN	35.71	1200	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY417

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004774

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

% Moisture: 59 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.1	U
319-85-7	beta-BHC	4.1	U
319-86-8	delta-BHC	4.1	U
58-89-9	gamma-BHC (Lindane)	4.1	U
76-44-8	Heptachlor	4.1	U
309-00-2	Aldrin	4.1	U
1024-57-3	Heptachlor epoxide	4.1	U
959-98-8	Endosulfan I	6.4	P
60-57-1	Dieldrin	8.0	U
72-55-9	4,4'-DDE	3.0	J
72-20-8	Endrin	8.0	U
33213-65-9	Endosulfan II	8.0	U
72-54-8	4,4'-DDD	8.0	U
1031-07-8	Endosulfan sulfate	8.0	U
50-29-3	4,4'-DDT	8.0	U
72-43-5	Methoxychlor	41	U
53494-70-5	Endrin ketone	8.0	U
7421-93-4	Endrin aldehyde	8.0	U
5103-71-9	alpha-Chlordane	4.1	U
5103-74-2	gamma-Chlordane	4.1	U
8001-35-2	Toxaphene	410	U
12674-11-2	Aroclor-1016	80	U
11104-28-2	Aroclor-1221	160	U
11141-16-5	Aroclor-1232	80	U
53469-21-9	Aroclor-1242	80	U
12672-29-6	Aroclor-1248	80	U
11097-69-1	Aroclor-1254	80	U
11096-82-5	Aroclor-1260	80	U

607

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ717

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5349S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 39.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30700			P
7440-36-0	Antimony	20.2	U		P
7440-38-2	Arsenic	42.3			F
7440-39-3	Barium	287			P
7440-41-7	Beryllium	2.0	B		P
7440-43-9	Cadmium	31.7			P
7440-70-2	Calcium	4010			P
7440-47-3	Chromium	37.9			P
7440-48-4	Cobalt	21.3	B		P
7440-50-8	Copper	59.0			P
7439-89-6	Iron	28100			P
7439-92-1	Lead	207			P
7439-95-4	Magnesium	3890			P
7439-96-5	Manganese	683			P
7439-97-6	Mercury	0.25	U		CV
7440-02-0	Nickel	35.7			P
7440-09-7	Potassium	2280	B		A
7782-49-2	Selenium	0.71	B	WN	F
7440-22-4	Silver	9.7			P
7440-23-5	Sodium	535	B		P
7440-28-0	Thallium	1.5	U		F
7440-62-2	Vanadium	58.0			P
7440-66-6	Zinc	290			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FY418

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ070

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 61 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	26	U
74-83-9	Bromomethane	26	U
75-01-4	Vinyl Chloride	26	U
75-00-3	Chloroethane	26	U
75-09-2	Methylene Chloride	160	B
67-64-1	Acetone	490	
75-15-0	Carbon Disulfide	26	U
75-35-4	1,1-Dichloroethene	26	U
75-34-3	1,1-Dichloroethane	26	U
540-59-0	1,2-Dichloroethene (total)	26	U
67-66-3	Chloroform	26	U
107-06-2	1,2-Dichloroethane	26	U
78-93-3	2-Butanone	91	
71-55-6	1,1,1-Trichloroethane	26	U
56-23-5	Carbon Tetrachloride	26	U
75-27-4	Bromodichloromethane	26	U
78-87-5	1,2-Dichloropropane	26	U
10061-02-6	cis-1,3-Dichloropropene	26	U
79-01-6	Trichloroethene	26	U
124-48-1	Dibromochloromethane	26	U
79-00-5	1,1,2-Trichloroethane	26	U
71-43-2	Benzene	26	U
10061-01-5	trans-1,3-Dichloropropene	26	U
75-25-2	Bromoform	26	U
108-10-1	4-Methyl-2-Pentanone	26	U
591-78-6	2-Hexanone	26	U
127-18-4	Tetrachloroethene	26	U
79-34-5	1,1,2,2-Tetrachloroethane	26	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	26	U
100-41-4	Ethylbenzene	26	U
100-42-5	Styrene	26	U
1330-20-7	Xylene (total)	26	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY418

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ070

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 61 Date Analyzed: 10/27/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.27	770	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY418

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG944

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	850	U
111-44-4	bis(2-Chloroethyl)Ether	850	U
95-57-8	2-Chlorophenol	850	U
541-73-1	1,3-Dichlorobenzene	210	J
106-46-7	1,4-Dichlorobenzene	140	J
95-50-1	1,2-Dichlorobenzene	850	U
95-48-7	2-Methylphenol	850	U
108-60-1	2,2'-oxybis(1-Chloropropane)	850	U
106-44-5	4-Methylphenol	850	U
621-64-7	N-Nitroso-Di-n-Propylamine	850	U
67-72-1	Hexachloroethane	850	U
98-95-3	Nitrobenzene	850	U
78-59-1	Isophorone	850	U
88-75-5	2-Nitrophenol	850	U
105-67-9	2,4-Dimethylphenol	850	U
111-91-1	bis(2-Chloroethoxy)Methane	850	U
120-83-2	2,4-Dichlorophenol	850	U
120-82-1	1,2,4-Trichlorobenzene	850	U
91-20-3	Naphthalene	850	U
106-47-8	4-Chloroaniline	850	U
87-68-3	Hexachlorobutadiene	850	U
59-50-7	4-Chloro-3-Methylphenol	850	U
91-57-6	2-Methylnaphthalene	850	U
77-47-4	Hexachlorocyclopentadiene	850	U
88-06-2	2,4,6-Trichlorophenol	850	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	850	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethyl Phthalate	850	U
208-96-8	Acenaphthylene	850	U
606-20-2	2,6-Dinitrotoluene	850	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	850	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY418

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG944

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	850	U
121-14-2	2,4-Dinitrotoluene	850	U
84-66-2	Diethylphthalate	850	U
7005-72-3	4-Chlorophenyl-phenylether	850	U
86-73-7	Fluorene	850	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-Methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	850	U
101-55-3	4-Bromophenyl-phenylether	850	U
118-74-1	Hexachlorobenzene	440	J
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	71	J
120-12-7	Anthracene	850	U
86-74-8	Carbazole	850	U
84-74-2	Di-n-Butylphthalate	850	U
206-44-0	Fluoranthene	850	U
129-00-0	Pyrene	62	J
85-68-7	Butylbenzylphthalate	850	U
91-94-1	3,3'-Dichlorobenzidine	850	U
56-55-3	Benzo(a)Anthracene	850	U
218-01-9	Chrysene	850	U
117-81-7	bis(2-Ethylhexyl)Phthalate	140	J
117-84-0	Di-n-Octyl Phthalate	850	U
205-99-2	Benzo(b)Fluoranthene	57	J
207-08-9	Benzo(k)Fluoranthene	850	U
50-32-8	Benzo(a)Pyrene	850	U
193-39-5	Indeno(1,2,3-cd)Pyrene	850	U
53-70-3	Dibenz(a,h)Anthracene	850	U
191-24-2	Benzo(g,h,i)Perylene	850	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY418

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BG944

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 61 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.86	1300	J
2.		UNKNOWN	6.87	2900	BJ
3.	4436-75-	3-Hexene-2,5-dione	7.45	3300	BJN
4.		UNKNOWN	8.53	1000	BJ
5.		UNKNOWN	9.24	1600	J
6.		UNKNOWN	9.32	4000	J
7.		UNKNOWN HYDROCARBON	18.39	5100	J
8.	10544-50-	Sulfur, mol. (S8)	21.68	16000	JN
9.		UNKNOWN	22.49	640	J
10.		UNKNOWN	22.89	640	J
11.		UNKNOWN MW252	23.64	5500	J
12.		UNKNOWN	23.73	1200	J
13.		UNKNOWN HYDROCARBON	24.45	810	J
14.		UNKNOWN	25.45	2200	J
15.		UNKNOWN HYDROCARBON	27.85	850	J
16.		UNKNOWN MW274	28.14	1400	J
17.		UNKNOWN MW218	28.34	2100	J
18.		UNKNOWN	29.10	4700	J
19.		UNKNOWN HYDROCARBON C29H60 M	29.33	1800	J
20.		UNKNOWN MW414	35.12	1800	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY418

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004775

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 61 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	8.3	JP
959-98-8	Endosulfan I	230	
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	14	JP
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	42	U
7421-93-4	Endrin aldehyde	42	U
5103-71-9	alpha-Chlordane	22	U
5103-74-2	gamma-Chlordane	3.2	J
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	420	U
11104-28-2	Aroclor-1221	850	U
11141-16-5	Aroclor-1232	420	U
53469-21-9	Aroclor-1242	420	U
12672-29-6	Aroclor-1248	420	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ718

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5350S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 42.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27300			P
7440-36-0	Antimony	18.8	U		P
7440-38-2	Arsenic	16.0		S	F
7440-39-3	Barium	241			P
7440-41-7	Beryllium	1.8	B		P
7440-43-9	Cadmium	15.7			P
7440-70-2	Calcium	3420			P
7440-47-3	Chromium	32.9			P
7440-48-4	Cobalt	14.7	B		P
7440-50-8	Copper	41.5			P
7439-89-6	Iron	25800			P
7439-92-1	Lead	112			P
7439-95-4	Magnesium	3830			P
7439-96-5	Manganese	702			P
7439-97-6	Mercury	0.23	U		CV
7440-02-0	Nickel	27.4			P
7440-09-7	Potassium	2520			A
7782-49-2	Selenium	0.66	B	WN	F
7440-22-4	Silver	9.8			P
7440-23-5	Sodium	426	B		P
7440-28-0	Thallium	1.4	U		F
7440-62-2	Vanadium	58.1			P
7440-66-6	Zinc	157			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY419

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ082

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 52 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	21	U
74-83-9	Bromomethane	21	U
75-01-4	Vinyl Chloride	21	U
75-00-3	Chloroethane	21	U
75-09-2	Methylene Chloride	41	B
67-64-1	Acetone	240	B
75-15-0	Carbon Disulfide	21	U
75-35-4	1,1-Dichloroethene	21	U
75-34-3	1,1-Dichloroethane	21	U
540-59-0	1,2-Dichloroethene (total)	21	U
67-66-3	Chloroform	21	U
107-06-2	1,2-Dichloroethane	21	U
78-93-3	2-Butanone	43	
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
75-27-4	Bromodichloromethane	21	U
78-87-5	1,2-Dichloropropane	21	U
10061-02-6	cis-1,3-Dichloropropene	21	U
79-01-6	Trichloroethene	21	U
124-48-1	Dibromochloromethane	21	U
79-00-5	1,1,2-Trichloroethane	21	U
71-43-2	Benzene	21	U
10061-01-5	trans-1,3-Dichloropropene	21	U
75-25-2	Bromoform	21	U
108-10-1	4-Methyl-2-Pentanone	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	21	U
79-34-5	1,1,2,2-Tetrachloroethane	21	U
108-88-3	Toluene	21	U
108-90-7	Chlorobenzene	21	U
100-41-4	Ethylbenzene	21	U
100-42-5	Styrene	21	U
1330-20-7	Xylene (total)	21	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY419

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ082

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 52 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 124389	Carbon dioxide	1.23	71	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY419

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG945

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 52 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	680	U
111-44-4	bis(2-Chloroethyl)Ether	680	U
95-57-8	2-Chlorophenol	680	U
541-73-1	1,3-Dichlorobenzene	140	J
106-46-7	1,4-Dichlorobenzene	87	J
95-50-1	1,2-Dichlorobenzene	680	U
95-48-7	2-Methylphenol	680	U
108-60-1	2,2'-oxybis(1-Chloropropane)	680	U
106-44-5	4-Methylphenol	680	U
621-64-7	N-Nitroso-Di-n-Propylamine	680	U
67-72-1	Hexachloroethane	680	U
98-95-3	Nitrobenzene	680	U
78-59-1	Isophorone	680	U
88-75-5	2-Nitrophenol	680	U
105-67-9	2,4-Dimethylphenol	680	U
111-91-1	bis(2-Chloroethoxy)Methane	680	U
120-83-2	2,4-Dichlorophenol	680	U
120-82-1	1,2,4-Trichlorobenzene	680	U
91-20-3	Naphthalene	680	U
106-47-8	4-Chloroaniline	680	U
87-68-3	Hexachlorobutadiene	680	U
59-50-7	4-Chloro-3-Methylphenol	680	U
91-57-6	2-Methylnaphthalene	680	U
77-47-4	Hexachlorocyclopentadiene	680	U
88-06-2	2,4,6-Trichlorophenol	680	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	680	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethyl Phthalate	680	U
208-96-8	Acenaphthylene	680	U
606-20-2	2,6-Dinitrotoluene	680	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	680	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY419

ab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG945

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 52 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	680	U
121-14-2	2,4-Dinitrotoluene	680	U
84-66-2	Diethylphthalate	680	U
7005-72-3	4-Chlorophenyl-phenylether	680	U
86-73-7	Fluorene	680	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-Methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	680	U
101-55-3	4-Bromophenyl-phenylether	680	U
118-74-1	Hexachlorobenzene	300	J
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	50	J
120-12-7	Anthracene	680	U
86-74-8	Carbazole	680	U
84-74-2	Di-n-Butylphthalate	680	U
206-44-0	Fluoranthene	680	U
129-00-0	Pyrene	36	J
85-68-7	Butylbenzylphthalate	680	U
91-94-1	3,3'-Dichlorobenzidine	680	U
56-55-3	Benzo(a)Anthracene	680	U
218-01-9	Chrysene	680	U
117-81-7	bis(2-Ethylhexyl)Phthalate	35	J
117-84-0	Di-n-Octyl Phthalate	680	U
205-99-2	Benzo(b)Fluoranthene	680	U
207-08-9	Benzo(k)Fluoranthene	680	U
50-32-8	Benzo(a)Pyrene	680	U
193-39-5	Indeno(1,2,3-cd)Pyrene	680	U
53-70-3	Dibenz(a,h)Anthracene	680	U
191-24-2	Benzo(g,h,i)Perylene	680	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY419

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG945

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 52 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.6

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.85	720	J
2.		UNKNOWN	6.86	1900	BJ
3.	4436-75-	3-Hexene-2,5-dione	7.46	2500	BJN
4.		UNKNOWN	7.62	380	J
5.		UNKNOWN	8.53	720	BJ
6.		UNKNOWN	9.24	1500	J
7.		UNKNOWN	9.32	2600	J
8.		UNKNOWN HYDROCARBON	18.38	960	J
9.	10544-50-	Sulfur, mol. (S8)	21.80	9600	JN
10.		UNKNOWN	21.82	270	J
11.		UNKNOWN	22.49	310	J
12.		UNKNOWN	23.63	2500	J
13.		UNKNOWN	25.45	690	J
14.		UNKNOWN	27.84	520	J
15.		UNKNOWN MW274	28.14	930	J
16.		UNKNOWN MW218 C17H14	28.34	1600	J
17.		UNKNOWN HYDROCARBON MW408 C2	29.33	1100	J
18.		UNKNOWN HYDROCARBON	30.98	690	J
19.		UNKNOWN MW414	35.11	1200	J
20.		UNKNOWN	36.01	890	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY419

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004776

Sample wt/vol: 30.2 (g/mL) G Lab File ID:

% Moisture: 52 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.6 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.5	U
319-85-7	beta-BHC	3.5	U
319-86-8	delta-BHC	3.5	U
58-89-9	gamma-BHC (Lindane)	3.5	U
76-44-8	Heptachlor	3.5	U
309-00-2	Aldrin	3.5	U
1024-57-3	Heptachlor epoxide	0.49	JP
959-98-8	Endosulfan I	14	
60-57-1	Dieldrin	6.8	U
72-55-9	4,4'-DDE	6.8	U
72-20-8	Endrin	6.8	U
33213-65-9	Endosulfan II	6.8	U
72-54-8	4,4'-DDD	1.1	JP
1031-07-8	Endosulfan sulfate	6.8	U
50-29-3	4,4'-DDT	6.8	U
72-43-5	Methoxychlor	35	U
53494-70-5	Endrin ketone	6.8	U
7421-93-4	Endrin aldehyde	6.8	U
5103-71-9	alpha-Chlordane	3.5	U
5103-74-2	gamma-Chlordane	3.5	U
8001-35-2	Toxaphene	350	U
12674-11-2	Aroclor-1016	68	U
11104-28-2	Aroclor-1221	140	U
11141-16-5	Aroclor-1232	68	U
53469-21-9	Aroclor-1242	68	U
12672-29-6	Aroclor-1248	68	U
11097-69-1	Aroclor-1254	68	U
11096-82-5	Aroclor-1260	68	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ719

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5351S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 48.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17100			P
7440-36-0	Antimony	16.4	U		P
7440-38-2	Arsenic	13.9		+	F
7440-39-3	Barium	208			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	12.8			P
7440-70-2	Calcium	3280			P
7440-47-3	Chromium	22.1			P
7440-48-4	Cobalt	10.3	B		P
7440-50-8	Copper	38.8			P
7439-89-6	Iron	22000			P
7439-92-1	Lead	122			P
7439-95-4	Magnesium	2950			P
7439-96-5	Manganese	603			P
7439-97-6	Mercury	0.21	U		CV
7440-02-0	Nickel	21.6			P
7440-09-7	Potassium	1430	B		A
7782-49-2	Selenium	0.70	B	WN	F
7440-22-4	Silver	7.7			P
7440-23-5	Sodium	534	B		P
7440-28-0	Thallium	1.2	U		F
7440-62-2	Vanadium	42.0			P
7440-66-6	Zinc	131			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ083

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 56 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	56	B
67-64-1	Acetone	150	B
75-15-0	Carbon Disulfide	23	U
75-35-4	1,1-Dichloroethene	23	U
75-34-3	1,1-Dichloroethane	23	U
540-59-0	1,2-Dichloroethene (total)	23	U
67-66-3	Chloroform	23	U
107-06-2	1,2-Dichloroethane	23	U
78-93-3	2-Butanone	35	
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
75-27-4	Bromodichloromethane	23	U
78-87-5	1,2-Dichloropropane	23	U
10061-02-6	cis-1,3-Dichloropropene	23	U
79-01-6	Trichloroethene	23	U
124-48-1	Dibromochloromethane	23	U
79-00-5	1,1,2-Trichloroethane	23	U
71-43-2	Benzene	23	U
10061-01-5	trans-1,3-Dichloropropene	23	U
75-25-2	Bromoform	23	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
108-88-3	Toluene	23	U
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U
100-42-5	Styrene	23	U
1330-20-7	Xylene (total)	23	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

Sample wt/vol: 5.0 (g/mL) G Lab File ID: CJ083

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 56 Date Analyzed: 10/28/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.23	45	BJN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG948

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	740	U
111-44-4	bis(2-Chloroethyl)Ether	740	U
95-57-8	2-Chlorophenol	740	U
541-73-1	1,3-Dichlorobenzene	370	J
106-46-7	1,4-Dichlorobenzene	220	J
95-50-1	1,2-Dichlorobenzene	740	U
95-48-7	2-Methylphenol	740	U
108-60-1	2,2'-oxybis(1-Chloropropane)	740	U
106-44-5	4-Methylphenol	740	U
621-64-7	N-Nitroso-Di-n-Propylamine	740	U
67-72-1	Hexachloroethane	740	U
98-95-3	Nitrobenzene	740	U
78-59-1	Isophorone	740	U
88-75-5	2-Nitrophenol	740	U
105-67-9	2,4-Dimethylphenol	740	U
111-91-1	bis(2-Chloroethoxy)Methane	740	U
120-83-2	2,4-Dichlorophenol	740	U
120-82-1	1,2,4-Trichlorobenzene	740	U
91-20-3	Naphthalene	740	U
106-47-8	4-Chloroaniline	740	U
87-68-3	Hexachlorobutadiene	740	U
59-50-7	4-Chloro-3-Methylphenol	740	U
91-57-6	2-Methylnaphthalene	740	U
77-47-4	Hexachlorocyclopentadiene	740	U
88-06-2	2,4,6-Trichlorophenol	740	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	740	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	740	U
208-96-8	Acenaphthylene	740	U
606-20-2	2,6-Dinitrotoluene	740	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	740	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG948

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	740	U
121-14-2	2,4-Dinitrotoluene	740	U
84-66-2	Diethylphthalate	740	U
7005-72-3	4-Chlorophenyl-phenylether	740	U
86-73-7	Fluorene	740	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	740	U
101-55-3	4-Bromophenyl-phenylether	740	U
118-74-1	Hexachlorobenzene	740	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	41	J
120-12-7	Anthracene	740	U
86-74-8	Carbazole	740	U
84-74-2	Di-n-Butylphthalate	740	U
206-44-0	Fluoranthene	42	J
129-00-0	Pyrene	70	J
85-68-7	Butylbenzylphthalate	740	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)Anthracene	50	J
218-01-9	Chrysene	70	J
117-81-7	bis(2-Ethylhexyl)Phthalate	740	U
117-84-0	Di-n-Octyl Phthalate	740	U
205-99-2	Benzo(b)Fluoranthene	38	J
207-08-9	Benzo(k)Fluoranthene	40	J
50-32-8	Benzo(a)Pyrene	740	U
193-39-5	Indeno(1,2,3-cd)Pyrene	740	U
53-70-3	Dibenz(a,h)Anthracene	740	U
191-24-2	Benzo(g,h,i)Perylene	73	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

Sample wt/vol: 30.2 (g/mL) G Lab File ID: BG948

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 56 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.85	640	J
2.		UNKNOWN	6.86	2200	BJ
3.	4436-75-	3-Hexene-2,5-dione	7.46	2900	BJN
4.		UNKNOWN	7.86	450	J
5.		UNKNOWN	9.24	1400	J
6.		UNKNOWN	9.33	3300	J
7.		UNKNOWN HYDROCARBON	18.39	450	J
8.	10544-50-	Sulfur, mol. (S8)	22.21	38000	JN
9.		UNKNOWN MW252	23.63	1200	J
10.		UNKNOWN HYDROCARBON	24.55	600	J
11.		UNKNOWN	25.45	750	J
12.		UNKNOWN HYDROCARBON	26.26	1100	J
13.		UNKNOWN	26.68	720	J
14.		UNKNOWN HYDROCARBON	27.86	750	J
15.		UNKNOWN MW274	28.14	1400	J
16.		UNKNOWN MW218	28.35	2200	J
17.		UNKNOWN HYDROCARBON MW408 C2	29.33	980	J
18.		UNKNOWN HYDROCARBON	30.99	870	J
19.		UNKNOWN	35.52	910	J
20.		UNKNOWN	35.71	910	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY420

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004777

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

% Moisture: 56 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.9	U
319-85-7	beta-BHC	3.9	U
319-86-8	delta-BHC	3.9	U
58-89-9	gamma-BHC (Lindane)	3.9	U
76-44-8	Heptachlor	3.9	U
309-00-2	Aldrin	3.9	U
1024-57-3	Heptachlor epoxide	1.0	J
959-98-8	Endosulfan I	23	
60-57-1	Dieldrin	7.5	U
72-55-9	4,4'-DDE	7.5	U
72-20-8	Endrin	7.5	U
33213-65-9	Endosulfan II	7.5	U
72-54-8	4,4'-DDD	2.4	J
1031-07-8	Endosulfan sulfate	7.5	U
50-29-3	4,4'-DDT	7.5	U
72-43-5	Methoxychlor	39	U
53494-70-5	Endrin ketone	7.5	U
7421-93-4	Endrin aldehyde	7.5	U
5103-71-9	alpha-Chlordane	3.9	U
5103-74-2	gamma-Chlordane	3.9	U
8001-35-2	Toxaphene	390	U
12674-11-2	Aroclor-1016	75	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	75	U
53469-21-9	Aroclor-1242	75	U
12672-29-6	Aroclor-1248	75	U
11097-69-1	Aroclor-1254	75	U
11096-82-5	Aroclor-1260	75	U

628

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ720

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5352S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 45.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23400			P
7440-36-0	Antimony	17.6	U		P
7440-38-2	Arsenic	24.8			F
7440-39-3	Barium	274			P
7440-41-7	Beryllium	1.5	B		P
7440-43-9	Cadmium	36.1			P
7440-70-2	Calcium	3130			P
7440-47-3	Chromium	29.6			P
7440-48-4	Cobalt	13.9	B		P
7440-50-8	Copper	31.6			P
7439-89-6	Iron	23100			P
7439-92-1	Lead	195			P
7439-95-4	Magnesium	2830			P
7439-96-5	Manganese	597			P
7439-97-6	Mercury	0.22	U		CV
7440-02-0	Nickel	21.5			P
7440-09-7	Potassium	1850	B		A
7782-49-2	Selenium	0.92	B	WN	F
7440-22-4	Silver	5.6			P
7440-23-5	Sodium	392	B		P
7440-28-0	Thallium	1.3	U		F
7440-62-2	Vanadium	49.5			P
7440-66-6	Zinc	164			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ099

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 55 Date Analyzed: 10/29/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	18	BJ
67-64-1	Acetone	430	
75-15-0	Carbon Disulfide	22	U
75-35-4	1,1-Dichloroethene	22	U
75-34-3	1,1-Dichloroethane	22	U
540-59-0	1,2-Dichloroethene (total)	22	U
67-66-3	Chloroform	22	U
107-06-2	1,2-Dichloroethane	22	U
78-93-3	2-Butanone	63	
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
75-27-4	Bromodichloromethane	22	U
78-87-5	1,2-Dichloropropane	22	U
10061-02-6	cis-1,3-Dichloropropene	22	U
79-01-6	Trichloroethene	22	U
124-48-1	Dibromochloromethane	22	U
79-00-5	1,1,2-Trichloroethane	22	U
71-43-2	Benzene	22	U
10061-01-5	trans-1,3-Dichloropropene	22	U
75-25-2	Bromoform	22	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-88-3	Toluene	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U
100-42-5	Styrene	22	U
1330-20-7	Xylene (total)	22	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

Sample wt/vol: 5.00 (g/mL) G Lab File ID: CJ099

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: not dec. 55 Date Analyzed: 10/29/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124389	Carbon dioxide	1.27	960	BJN

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG949

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-Methylphenol	1800	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	1800	U
85-01-8	Phenanthrene	730	U
120-12-7	Anthracene	730	U
86-74-8	Carbazole	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	730	U
129-00-0	Pyrene	38	J
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	730	U
56-55-3	Benzo(a)Anthracene	730	U
218-01-9	Chrysene	49	J
117-81-7	bis(2-Ethylhexyl)Phthalate	730	U
117-84-0	Di-n-Octyl Phthalate	730	U
205-99-2	Benzo(b)Fluoranthene	730	U
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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG949

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.0

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	160	J
106-46-7	1,4-Dichlorobenzene	90	J
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	1800	U
91-58-7	2-Chloronaphthalene	730	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethyl Phthalate	730	U
208-96-8	Acenaphthylene	730	U
606-20-2	2,6-Dinitrotoluene	730	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	730	U

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

Sample wt/vol: 30.3 (g/mL) G Lab File ID: BG949

Level: (low/med) LOW Date Received: 10/26/92

% Moisture: 55 decanted: (Y/N) N Date Extracted: 10/28/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 10/31/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.0

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.85	630	J
2.		UNKNOWN	6.86	2100	BJ
3.	4436-75-	3-Hexene-2,5-dione	7.46	3000	BJN
4.		UNKNOWN	7.87	440	J
5.		UNKNOWN	8.54	890	BJ
6.		UNKNOWN	9.24	1200	J
7.		UNKNOWN	9.32	3200	J
8.		UNKNOWN MW204 C15H24	15.24	700	J
9.		UNKNOWN	18.38	370	J
10.	10544-50-	Sulfur, mol. (S8)	22.23	34000	JN
11.		UNKNOWN MW252	23.65	2900	J
12.		UNKNOWN MW252	23.99	810	J
13.		UNKNOWN HYDROCARBON	24.56	550	J
14.		UNKNOWN	25.46	1600	J
15.		UNKNOWN MW218 C17H14	28.34	660	J
16.		UNKNOWN MW408 C29H60	29.33	1000	J
17.		UNKNOWN HYDROCARBON	30.99	660	J
18.		UNKNOWN	32.48	700	J
19.		UNKNOWN MW414	35.12	1100	J
20.		UNKNOWN	36.03	700	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY421

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY416

Matrix: (soil/water) SOIL Lab Sample ID: BS004778

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

% Moisture: 55 decanted: (Y/N) N Date Received: 10/26/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/03/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.0 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.8	U
319-85-7	beta-BHC	3.8	U
319-86-8	delta-BHC	3.8	U
58-89-9	gamma-BHC (Lindane)	3.8	U
76-44-8	Heptachlor	3.8	U
309-00-2	Aldrin	3.8	U
1024-57-3	Heptachlor epoxide	3.8	U
959-98-8	Endosulfan I	6.9	P
60-57-1	Dieldrin	7.3	U
72-55-9	4,4'-DDE	7.3	U
72-20-8	Endrin	7.3	U
33213-65-9	Endosulfan II	7.3	U
72-54-8	4,4'-DDD	7.3	U
1031-07-8	Endosulfan sulfate	7.3	U
50-29-3	4,4'-DDT	7.3	U
72-43-5	Methoxychlor	38	U
53494-70-5	Endrin ketone	7.3	U
7421-93-4	Endrin aldehyde	7.3	U
5103-71-9	alpha-Chlordane	3.8	U
5103-74-2	gamma-Chlordane	3.8	U
8001-35-2	Toxaphene	380	U
12674-11-2	Aroclor-1016	73	U
11104-28-2	Aroclor-1221	150	U
11141-16-5	Aroclor-1232	73	U
53469-21-9	Aroclor-1242	73	U
12672-29-6	Aroclor-1248	73	U
11097-69-1	Aroclor-1254	73	U
11096-82-5	Aroclor-1260	73	U

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ721

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

Matrix (soil/water): SOIL Lab Sample ID: 5353S

Level (low/med): LOW Date Received: 10/27/92

% Solids: 46.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26900			P
7440-36-0	Antimony	17.4	U		P
7440-38-2	Arsenic	22.6			F
7440-39-3	Barium	304			P
7440-41-7	Beryllium	2.0	B		P
7440-43-9	Cadmium	23.3			P
7440-70-2	Calcium	3120			P
7440-47-3	Chromium	36.6			P
7440-48-4	Cobalt	13.7	B		P
7440-50-8	Copper	31.2			P
7439-89-6	Iron	22500			P
7439-92-1	Lead	219			P
7439-95-4	Magnesium	3130			P
7439-96-5	Manganese	454			P
7439-97-6	Mercury	0.22	U		CV
7440-02-0	Nickel	24.1			P
7440-09-7	Potassium	2180			A
7782-49-2	Selenium	0.43	U	WN	F
7440-22-4	Silver	5.7			P
7440-23-5	Sodium	500	B		P
7440-28-0	Thallium	1.3	U		F
7440-62-2	Vanadium	55.1			P
7440-66-6	Zinc	154			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY422

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY422V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY422V

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 60 Date Analyzed: 10/27/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	25	U
74-83-9	Bromomethane	25	U
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	25	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	230	
75-15-0	Carbon Disulfide	25	U
75-35-4	1,1-Dichloroethene	25	U
75-34-3	1,1-Dichloroethane	25	U
540-59-0	1,2-Dichloroethene (total)	25	U
67-66-3	Chloroform	25	U
107-06-2	1,2-Dichloroethane	25	U
78-93-3	2-Butanone	54	
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon Tetrachloride	25	U
75-27-4	Bromodichloromethane	25	U
78-87-5	1,2-Dichloropropane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
79-01-6	Trichloroethene	25	U
124-48-1	Dibromochloromethane	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
75-25-2	Bromoform	25	U
108-10-1	4-Methyl-2-Pentanone	25	U
591-78-6	2-Hexanone	25	U
127-18-4	Tetrachloroethene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-88-3	Toluene	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U
100-42-5	Styrene	25	U
1330-20-7	Xylene (total)	25	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY422

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY422V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY422V

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 60 Date Analyzed: 10/27/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY422

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY422B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY422B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 60 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	820	U
111-44-4	bis(2-Chloroethyl)Ether	820	U
95-57-8	2-Chlorophenol	820	U
541-73-1	1,3-Dichlorobenzene	820	U
106-46-7	1,4-Dichlorobenzene	820	U
95-50-1	1,2-Dichlorobenzene	820	U
95-48-7	2-Methylphenol	820	U
108-60-1	2,2'-oxybis(1-Chloropropane)	820	U
106-44-5	4-Methylphenol	820	U
621-64-7	N-Nitroso-Di-n-Propylamine	820	U
67-72-1	Hexachloroethane	820	U
98-95-3	Nitrobenzene	820	U
78-59-1	Isophorone	820	U
88-75-5	2-Nitrophenol	820	U
105-67-9	2,4-Dimethylphenol	820	U
111-91-1	bis(2-Chloroethoxy)Methane	820	U
120-83-2	2,4-Dichlorophenol	820	U
120-82-1	1,2,4-Trichlorobenzene	820	U
91-20-3	Naphthalene	820	U
106-47-8	4-Chloroaniline	820	U
87-68-3	Hexachlorobutadiene	820	U
59-50-7	4-Chloro-3-Methylphenol	820	U
91-57-6	2-Methylnaphthalene	820	U
77-47-4	Hexachlorocyclopentadiene	820	U
88-06-2	2,4,6-Trichlorophenol	820	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	820	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	820	U
208-96-8	Acenaphthylene	820	U
606-20-2	2,6-Dinitrotoluene	820	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	820	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY422

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY422B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY422B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 60 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	820	U
121-14-2	2,4-Dinitrotoluene	820	U
84-66-2	Diethylphthalate	820	U
7005-72-3	4-Chlorophenyl-phenylether	820	U
86-73-7	Fluorene	820	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	820	U
101-55-3	4-Bromophenyl-phenylether	820	U
118-74-1	Hexachlorobenzene	820	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	51	J
120-12-7	Anthracene	820	U
86-74-8	Carbazole	820	U
84-74-2	Di-n-Butylphthalate	820	U
206-44-0	Fluoranthene	820	U
129-00-0	Pyrene	820	U
85-68-7	Butylbenzylphthalate	820	U
91-94-1	3,3'-Dichlorobenzidine	820	U
56-55-3	Benzo(A) anthracene	820	U
218-01-9	Chrysene	820	U
117-81-7	bis(2-Ethylhexyl)Phthalate	140	J
117-84-0	Di-n-Octylphthalate	820	U
205-99-2	Benzo(b)Fluoranthene	820	U
207-08-9	Benzo(k)Fluoranthene	820	U
50-32-8	Benzo(a)Pyrene	820	U
193-39-5	Indeno(1,2,3-cd)Pyrene	820	U
53-70-3	Dibenz(a,h)Anthracene	820	U
191-24-2	Benzo(g,h,i)Perylene	820	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY422

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY422B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY422B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 60 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.13	440	J
2.	00-00-0	UNKNOWN	6.72	1600	JB
3.	57-15-8	1,1,1-TRICHLORO-2-METHYL-2-P	7.30	390	JBN
4.	00-00-0	UNKNOWN	7.92	1100	JB
5.	00-00-0	UNKNOWN	9.22	510	JB
6.	00-00-0	UNKNOWN	9.33	280	J
7.	00-00-0	UNKNOWN	13.93	440	J
8.	00-00-0	UNKNOWN	14.27	360	J
9.	00-00-0	UNKNOWN	27.62	600	J
10.	00-00-0	UNKNOWN	30.60	210	J
11.	00-00-0	UNKNOWN	30.92	250	J
12.	00-00-0	UNKNOWN	31.07	600	J
13.	00-00-0	UNKNOWN	31.32	340	J
14.	00-00-0	UNKNOWN	31.77	1600	J
15.	00-00-0	UNKNOWN	33.92	1000	J
16.	00-00-0	UNKNOWN ORGANIC ACID	35.62	1400	J
17.	00-00-0	UNKNOWN	37.27	770	J
18.	00-00-0	UNKNOWN	39.00	1100	J
19.	00-00-0	UNKNOWN	39.45	1200	J
20.	00-00-0	UNKNOWN	39.65	1300	J

1D

PESTICIDE ORGANICS AN

EPA SAMPLE NO.

FY422

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18218

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

% Moisture: 60 decanted: (Y/N) N Date Received: 10/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/27/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.2	U
319-85-7	beta-BHC	4.2	U
319-86-8	delta-BHC	4.2	U
58-89-9	gamma-BHC (Lindane)	4.2	U
76-44-8	Heptachlor	4.2	U
309-00-2	Aldrin	4.2	U
1024-57-3	Heptachlor epoxide	4.2	U
959-98-8	Endosulfan I	4.2	U
60-57-1	Dieldrin	8.2	U
72-55-9	4,4'-DDE	8.2	U
72-20-8	Endrin	8.2	U
33213-65-9	Endosulfan II	8.2	U
72-54-8	4,4'-DDD	8.2	U
1031-07-8	Endosulfan sulfate	8.2	U
50-29-3	4,4'-DDT	8.2	U
72-43-5	Methoxychlor	42	U
53494-70-5	Endrin ketone	8.2	U
7421-36-3	Endrin aldehyde	8.2	U
5103-71-9	alpha-Chlordane	4.2	U
5103-74-2	gamma-Chlordane	4.2	U
8001-35-2	Toxaphene	420	U
12674-11-2	Aroclor-1016	82	U
11104-28-2	Aroclor-1221	170	U
11141-16-5	Aroclor-1232	82	U
53469-21-9	Aroclor-1242	82	U
12672-29-6	Aroclor-1248	82	U
11097-69-1	Aroclor-1254	82	U
11096-82-5	Aroclor-1260	82	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ722

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ722____

Level (low/med): LOW__ v00002 Date Received: 10/27/92

% Solids: _43.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18600			P
7440-36-0	Antimony	9.6	U	N	P
7440-38-2	Arsenic	27.1			F
7440-39-3	Barium	218			P
7440-41-7	Beryllium	1.1	B		P
7440-43-9	Cadmium	17.0			P
7440-70-2	Calcium	5000		E	P
7440-47-3	Chromium	23.6			P
7440-48-4	Cobalt	17.4	B		P
7440-50-8	Copper	26.4			P
7439-89-6	Iron	21200			P
7439-92-1	Lead	172		*	F
7439-95-4	Magnesium	3600			P
7439-96-5	Manganese	593			P
7439-97-6	Mercury	0.16	U		CV
7440-02-0	Nickel	21.2			P
7440-09-7	Potassium	1510	B		P
7782-49-2	Selenium	3.9	U	WN	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	246	B		P
7440-28-0	Thallium	0.65	B		F
7440-62-2	Vanadium	33.5			P
7440-66-6	Zinc	173		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY423

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY423VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY423VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 43 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	7	BJ
67-64-1	Acetone	18	U
75-15-0	Carbon Disulfide	18	U
75-35-4	1,1-Dichloroethene	18	U
75-34-3	1,1-Dichloroethane	18	U
540-59-0	1,2-Dichloroethene (total)	18	U
67-66-3	Chloroform	18	U
107-06-2	1,2-Dichloroethane	18	U
78-93-3	2-Butanone	18	U
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
75-27-4	Bromodichloromethane	18	U
78-87-5	1,2-Dichloropropane	18	U
10061-01-5	cis-1,3-Dichloropropene	18	U
79-01-6	Trichloroethene	18	U
124-48-1	Dibromochloromethane	18	U
79-00-5	1,1,2-Trichloroethane	18	U
71-43-2	Benzene	18	U
10061-02-6	trans-1,3-Dichloropropene	18	U
75-25-2	Bromoform	18	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
108-88-3	Toluene	7	J
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	18	U
1330-20-7	Xylene (total)	8	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY423

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY423VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY423VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 43 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY423

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY423B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY423B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	580	U
111-44-4	bis(2-Chloroethyl)Ether	580	U
95-57-8	2-Chlorophenol	580	U
541-73-1	1,3-Dichlorobenzene	580	U
106-46-7	1,4-Dichlorobenzene	580	U
95-50-1	1,2-Dichlorobenzene	580	U
95-48-7	2-Methylphenol	580	U
108-60-1	2,2'-oxybis(1-Chloropropane)	580	U
106-44-5	4-Methylphenol	580	U
621-64-7	N-Nitroso-Di-n-Propylamine	580	U
67-72-1	Hexachloroethane	580	U
98-95-3	Nitrobenzene	580	U
78-59-1	Isophorone	580	U
88-75-5	2-Nitrophenol	580	U
105-67-9	2,4-Dimethylphenol	580	U
111-91-1	bis(2-Chloroethoxy)Methane	580	U
120-83-2	2,4-Dichlorophenol	580	U
120-82-1	1,2,4-Trichlorobenzene	580	U
91-20-3	Naphthalene	50	J
106-47-8	4-Chloroaniline	580	U
87-68-3	Hexachlorobutadiene	580	U
59-50-7	4-Chloro-3-Methylphenol	580	U
91-57-6	2-Methylnaphthalene	580	U
77-47-4	Hexachlorocyclopentadiene	580	U
88-06-2	2,4,6-Trichlorophenol	580	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	580	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	580	U
208-96-8	Acenaphthylene	580	U
606-20-2	2,6-Dinitrotoluene	580	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	580	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY423

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY423B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY423B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	580	U
121-14-2	2,4-Dinitrotoluene	580	U
84-66-2	Diethylphthalate	580	U
7005-72-3	4-Chlorophenyl-phenylether	580	U
86-73-7	Fluorene	580	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-Methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	580	U
101-55-3	4-Bromophenyl-phenylether	580	U
118-74-1	Hexachlorobenzene	580	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	580	U
120-12-7	Anthracene	580	U
86-74-8	Carbazole	580	U
84-74-2	Di-n-Butylphthalate	580	U
206-44-0	Fluoranthene	580	U
129-00-0	Pyrene	580	U
85-68-7	Butylbenzylphthalate	580	U
91-94-1	3,3'-Dichlorobenzidine	580	U
56-55-3	Benzo(A) anthracene	580	U
218-01-9	Chrysene	580	U
117-81-7	bis(2-Ethylhexyl)Phthalate	180	J
117-84-0	Di-n-Octylphthalate	580	U
205-99-2	Benzo(b)Fluoranthene	580	U
207-08-9	Benzo(k)Fluoranthene	580	U
50-32-8	Benzo(a)Pyrene	580	U
193-39-5	Indeno(1,2,3-cd)Pyrene	580	U
53-70-3	Dibenz(a,h)Anthracene	580	U
191-24-2	Benzo(g,h,i)Perylene	580	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY423

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY423B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY423B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 43 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 19 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	5.75	180	JB
2.	00-00-0	UNKNOWN	6.17	330	J
3.	00-00-0	UNKNOWN	6.73	740	JB
4.	00-00-0	UNKNOWN	7.33	220	J
5.	00-00-0	UNKNOWN	7.95	620	JB
6.	00-00-0	UNKNOWN	9.25	360	JB
7.	00-00-0	UNKNOWN	13.95	300	J
8.	00-00-0	UNKNOWN	14.30	250	J
9.	00-00-0	UNKNOWN	16.42	270	J
10.	00-00-0	UNKNOWN	31.98	190	J
11.	00-00-0	UNKNOWN	33.40	410	J
12.	00-00-0	UNKNOWN ALKANE	33.93	670	J
13.	00-00-0	UNKNOWN ALKANE	35.65	1300	J
14.	00-00-0	UNKNOWN ALKANE	37.27	690	J
15.	00-00-0	UNKNOWN	37.53	170	J
16.	00-00-0	UNKNOWN	38.43	300	J
17.	00-00-0	UNKNOWN	39.02	480	J
18.	00-00-0	UNKNOWN	39.10	720	J
19.	00-00-0	UNKNOWN	39.67	190	J

PESTICIDE ORGANICS ANALYSIS DAT

EPA SAMPLE NO.

FY423

Lab Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18219

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

% Moisture: 43 decanted: (Y/N) N Date Received: 10/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/27/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.0	U
319-85-7	beta-BHC	3.0	U
319-86-8	delta-BHC	3.0	U
58-89-9	gamma-BHC (Lindane)	3.0	U
76-44-8	Heptachlor	3.0	U
309-00-2	Aldrin	3.0	U
1024-57-3	Heptachlor epoxide	3.0	U
959-98-8	Endosulfan I	3.0	U
60-57-1	Dieldrin	5.8	U
72-55-9	4,4'-DDE	5.8	U
72-20-8	Endrin	5.8	U
33213-65-9	Endosulfan II	5.8	U
72-54-8	4,4'-DDD	5.8	U
1031-07-8	Endosulfan sulfate	5.8	U
50-29-3	4,4'-DDT	5.8	U
72-43-5	Methoxychlor	30	U
53494-70-5	Endrin ketone	5.8	U
7421-36-3	Endrin aldehyde	5.8	U
5103-71-9	alpha-Chlordane	3.0	U
5103-74-2	gamma-Chlordane	3.0	U
8001-35-2	Toxaphene	300	U
12674-11-2	Aroclor-1016	58	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	58	U
53469-21-9	Aroclor-1242	58	U
12672-29-6	Aroclor-1248	58	U
11097-69-1	Aroclor-1254	58	U
11096-82-5	Aroclor-1260	58	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ723

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ723____

Level (low/med): LOW__ 00003 Date Received: 10/27/92

Solids: _57.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27600			P
7440-36-0	Antimony	6.7	U	N	P
7440-38-2	Arsenic	5.9	B		F
7440-39-3	Barium	278			P
7440-41-7	Beryllium	2.1			P
7440-43-9	Cadmium	0.89	B		P
7440-70-2	Calcium	3920		E	P
7440-47-3	Chromium	30.6			P
7440-48-4	Cobalt	15.6			P
7440-50-8	Copper	27.4			P
7439-89-6	Iron	31400			P
7439-92-1	Lead	14.0		*	F
7439-95-4	Magnesium	5660			P
7439-96-5	Manganese	675			P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	31.2			P
7440-09-7	Potassium	3360			P
7782-49-2	Selenium	2.6	U	WN	F
7440-22-4	Silver	0.81	U		P
7440-23-5	Sodium	332	B		P
7440-28-0	Thallium	0.38	U	W	F
7440-62-2	Vanadium	52.2			P
7440-66-6	Zinc	108		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY424

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY424VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY424VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 63 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	27	U
74-83-9	Bromomethane	27	U
75-01-4	Vinyl Chloride	27	U
75-00-3	Chloroethane	27	U
75-09-2	Methylene Chloride	11	BJ
67-64-1	Acetone	160	B
75-15-0	Carbon Disulfide	27	U
75-35-4	1,1-Dichloroethene	27	U
75-34-3	1,1-Dichloroethane	27	U
540-59-0	1,2-Dichloroethene (total)	27	U
67-66-3	Chloroform	27	U
107-06-2	1,2-Dichloroethane	27	U
78-93-3	2-Butanone	45	
71-55-6	1,1,1-Trichloroethane	27	U
56-23-5	Carbon Tetrachloride	27	U
75-27-4	Bromodichloromethane	27	U
78-87-5	1,2-Dichloropropane	27	U
10061-01-5	cis-1,3-Dichloropropene	27	U
79-01-6	Trichloroethene	27	U
124-48-1	Dibromochloromethane	27	U
79-00-5	1,1,2-Trichloroethane	27	U
71-43-2	Benzene	27	U
10061-02-6	trans-1,3-Dichloropropene	27	U
75-25-2	Bromoform	27	U
108-10-1	4-Methyl-2-Pentanone	27	U
591-78-6	2-Hexanone	27	U
127-18-4	Tetrachloroethene	27	U
79-34-5	1,1,2,2-Tetrachloroethane	27	U
108-88-3	Toluene	27	U
108-90-7	Chlorobenzene	27	U
100-41-4	Ethylbenzene	27	U
100-42-5	Styrene	27	U
1330-20-7	Xylene (total)	27	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY424

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY424VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY424VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 63 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY424

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY424B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY424B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	890	U
111-44-4	bis(2-Chloroethyl)Ether	890	U
95-57-8	2-Chlorophenol	890	U
541-73-1	1,3-Dichlorobenzene	890	U
106-46-7	1,4-Dichlorobenzene	890	U
95-50-1	1,2-Dichlorobenzene	890	U
95-48-7	2-Methylphenol	890	U
108-60-1	2,2'-oxybis(1-Chloropropane)	890	U
106-44-5	4-Methylphenol	890	U
621-64-7	N-Nitroso-Di-n-Propylamine	890	U
67-72-1	Hexachloroethane	890	U
98-95-3	Nitrobenzene	890	U
78-59-1	Isophorone	890	U
88-75-5	2-Nitrophenol	890	U
105-67-9	2,4-Dimethylphenol	890	U
111-91-1	bis(2-Chloroethoxy)Methane	890	U
120-83-2	2,4-Dichlorophenol	890	U
120-82-1	1,2,4-Trichlorobenzene	890	U
91-20-3	Naphthalene	130	J
106-47-8	4-Chloroaniline	890	U
87-68-3	Hexachlorobutadiene	890	U
59-50-7	4-Chloro-3-Methylphenol	890	U
91-57-6	2-Methylnaphthalene	890	U
77-47-4	Hexachlorocyclopentadiene	890	U
88-06-2	2,4,6-Trichlorophenol	890	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	890	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	890	U
208-96-8	Acenaphthylene	890	U
606-20-2	2,6-Dinitrotoluene	890	U
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	890	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY424

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY424B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY424B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	890	U
121-14-2	2,4-Dinitrotoluene	890	U
84-66-2	Diethylphthalate	890	U
7005-72-3	4-Chlorophenyl-phenylether	890	U
86-73-7	Fluorene	54	J
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-Methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	890	U
101-55-3	4-Bromophenyl-phenylether	890	U
118-74-1	Hexachlorobenzene	890	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	890	U
86-74-8	Carbazole	890	U
84-74-2	Di-n-Butylphthalate	890	U
206-44-0	Fluoranthene	83	J
129-00-0	Pyrene	84	J
85-68-7	Butylbenzylphthalate	890	U
91-94-1	3,3'-Dichlorobenzidine	890	U
56-55-3	Benzo(A) anthracene	890	U
218-01-9	Chrysene	48	J
117-81-7	bis(2-Ethylhexyl)Phthalate	180	J
117-84-0	Di-n-Octylphthalate	890	U
205-99-2	Benzo(b)Fluoranthene	890	U
207-08-9	Benzo(k)Fluoranthene	890	U
50-32-8	Benzo(a)Pyrene	890	U
193-39-5	Indeno(1,2,3-cd)Pyrene	890	U
53-70-3	Dibenz(a,h)Anthracene	890	U
191-24-2	Benzo(g,h,i)Perylene	890	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY424

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY424B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY424B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 63 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.9

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.27	680	J
2.	00-00-0	UNKNOWN	6.80	1800	JB
3.	57-15-8	1,1,1-TRICHLORO-2-METHYL-2-P	7.38	500	JBN
4.	00-00-0	UNKNOWN	8.02	1200	JB
5.	00-00-0	UNKNOWN	9.30	510	JB
6.	00-00-0	UNKNOWN	14.35	430	J
7.	00-00-0	UNKNOWN	17.38	610	J
8.	00-00-0	UNKNOWN	28.23	530	J
9.	00-00-0	UNKNOWN	30.37	790	J
10.	00-00-0	UNKNOWN	30.43	1300	J
11.	00-00-0	UNKNOWN	30.83	500	J
12.	00-00-0	UNKNOWN	31.20	810	J
13.	00-00-0	UNKNOWN	31.83	620	J
14.	00-00-0	UNKNOWN ALKANE	34.00	1600	J
15.	00-00-0	UNKNOWN ORGANIC ACID	35.70	2200	J
16.	00-00-0	UNKNOWN	37.35	1500	J
17.	00-00-0	UNKNOWN	39.10	1700	J
18.	00-00-0	UNKNOWN	39.17	2800	J
19.	00-00-0	UNKNOWN	39.53	1200	J
20.	00-00-0	UNKNOWN	39.75	2000	J

PESTICIDE ORGANICS ANALYS

EPA SAMPLE NO.

FY424

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18220

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

% Moisture: 63 decanted: (Y/N) N Date Received: 10/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/27/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.6	U
319-85-7	beta-BHC	4.6	U
319-86-8	delta-BHC	4.6	U
58-89-9	gamma-BHC (Lindane)	4.6	U
76-44-8	Heptachlor	4.6	U
309-00-2	Aldrin	4.6	U
1024-57-3	Heptachlor epoxide	4.6	U
959-98-8	Endosulfan I	4.6	U
60-57-1	Dieldrin	8.9	U
72-55-9	4,4'-DDE	8.9	U
72-20-8	Endrin	8.9	U
33213-65-9	Endosulfan II	8.9	U
72-54-8	4,4'-DDD	8.9	U
1031-07-8	Endosulfan sulfate	8.9	U
50-29-3	4,4'-DDT	8.9	U
72-43-5	Methoxychlor	46	U
53494-70-5	Endrin ketone	8.9	U
7421-36-3	Endrin aldehyde	8.9	U
5103-71-9	alpha-Chlordane	4.6	U
5103-74-2	gamma-Chlordane	4.6	U
8001-35-2	Toxaphene	460	U
12674-11-2	Aroclor-1016	89	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	89	U
53469-21-9	Aroclor-1242	89	U
12672-29-6	Aroclor-1248	89	U
11097-69-1	Aroclor-1254	89	U
11096-82-5	Aroclor-1260	89	U

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ724

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ724____

Level (low/med): LOW__ 00004 Date Received: 10/27/92

% Solids: _40.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17900			P
7440-36-0	Antimony	20.8	B	N	P
7440-38-2	Arsenic	20.8	B		F
7440-39-3	Barium	224			P
7440-41-7	Beryllium	1.3	B		P
7440-43-9	Cadmium	10.7			P
7440-70-2	Calcium	3150		E	P
7440-47-3	Chromium	22.7			P
7440-48-4	Cobalt	15.4	B		P
7440-50-8	Copper	26.2			P
7439-89-6	Iron	19500			P
7439-92-1	Lead	182		*	F
7439-95-4	Magnesium	2370			P
7439-96-5	Manganese	491			P
7439-97-6	Mercury	0.19	U		CV
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	1010	B		P
7782-49-2	Selenium	4.2	U	WN	F
7440-22-4	Silver	1.2	U		P
7440-23-5	Sodium	465	B		P
7440-28-0	Thallium	0.61	U		F
7440-62-2	Vanadium	31.0			P
7440-66-6	Zinc	148		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY425

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY425VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY425VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 65 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	29	U
74-83-9	Bromomethane	29	U
75-01-4	Vinyl Chloride	29	U
75-00-3	Chloroethane	29	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	290	B
75-15-0	Carbon Disulfide	3	J
75-35-4	1,1-Dichloroethene	29	U
75-34-3	1,1-Dichloroethane	29	U
540-59-0	1,2-Dichloroethene (total)	29	U
67-66-3	Chloroform	29	U
107-06-2	1,2-Dichloroethane	29	U
78-93-3	2-Butanone	87	
71-55-6	1,1,1-Trichloroethane	29	U
56-23-5	Carbon Tetrachloride	29	U
75-27-4	Bromodichloromethane	29	U
78-87-5	1,2-Dichloropropane	29	U
10061-01-5	cis-1,3-Dichloropropene	29	U
79-01-6	Trichloroethene	29	U
124-48-1	Dibromochloromethane	29	U
79-00-5	1,1,2-Trichloroethane	29	U
71-43-2	Benzene	29	U
10061-02-6	trans-1,3-Dichloropropene	29	U
75-25-2	Bromoform	29	U
108-10-1	4-Methyl-2-Pentanone	29	U
591-78-6	2-Hexanone	29	U
127-18-4	Tetrachloroethene	29	U
79-34-5	1,1,2,2-Tetrachloroethane	29	U
108-88-3	Toluene	29	U
108-90-7	Chlorobenzene	29	U
100-41-4	Ethylbenzene	29	U
100-42-5	Styrene	29	U
1330-20-7	Xylene (total)	29	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY425

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY425VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY425VR

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: not dec. 65 Date Analyzed: 10/29/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY425

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY425B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY425B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 65 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	940 ✓	U
111-44-4	bis(2-Chloroethyl)Ether	940	U
95-57-8	2-Chlorophenol	940	U
541-73-1	1,3-Dichlorobenzene	67	J
106-46-7	1,4-Dichlorobenzene	940	U
95-50-1	1,2-Dichlorobenzene	940	U
95-48-7	2-Methylphenol	940	U
108-60-1	2,2'-oxybis(1-Chloropropane)	940	U
106-44-5	4-Methylphenol	940	U
621-64-7	N-Nitroso-Di-n-Propylamine	940	U
67-72-1	Hexachloroethane	940	U
98-95-3	Nitrobenzene	940	U
78-59-1	Isophorone	940	U
88-75-5	2-Nitrophenol	940	U
105-67-9	2,4-Dimethylphenol	940	U
111-91-1	bis(2-Chloroethoxy)Methane	940	U
120-83-2	2,4-Dichlorophenol	940	U
120-82-1	1,2,4-Trichlorobenzene	940	U
91-20-3	Naphthalene	57	J
106-47-8	4-Chloroaniline	940	U
87-68-3	Hexachlorobutadiene	940	U
59-50-7	4-Chloro-3-Methylphenol	940	U
91-57-6	2-Methylnaphthalene	940	U
77-47-4	Hexachlorocyclopentadiene	940	U
88-06-2	2,4,6-Trichlorophenol	940	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	940	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	940	U
208-96-8	Acenaphthylene	940	U
606-20-2	2,6-Dinitrotoluene	940	U
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	940	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY425

b Name: ENCOTEC Contract: 68-D2-0033

b Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY425B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY425B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 65 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	940	U
121-14-2	2,4-Dinitrotoluene	940	U
84-66-2	Diethylphthalate	940	U
7005-72-3	4-Chlorophenyl-phenylether	940	U
86-73-7	Fluorene	51	J
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-Methylphenol	2300	U
86-30-6	N-Nitrosodiphenylamine (1)	940	U
101-55-3	4-Bromophenyl-phenylether	940	U
118-74-1	Hexachlorobenzene	940	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	180	J
120-12-7	Anthracene	60	J
86-74-8	Carbazole	940	U
84-74-2	Di-n-Butylphthalate	940	U
206-44-0	Fluoranthene	200	J
129-00-0	Pyrene	490	J
85-68-7	Butylbenzylphthalate	940	U
91-94-1	3,3'-Dichlorobenzidine	940	U
56-55-3	Benzo(A) anthracene	80	J
218-01-9	Chrysene	190	J
117-81-7	bis(2-Ethylhexyl)Phthalate	390	J
117-84-0	Di-n-Octylphthalate	940	U
205-99-2	Benzo(b)Fluoranthene	62	J
207-08-9	Benzo(k)Fluoranthene	940	U
50-32-8	Benzo(a)Pyrene	57	J
193-39-5	Indeno(1,2,3-cd)Pyrene	940	U
53-70-3	Dibenz(a,h)Anthracene	940	U
191-24-2	Benzo(g,h,i)Perylene	940	U

(1) - Cannot be separated from Diphenylamine

0787

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY425

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY425B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY425B

Level: (low/med) LOW Date Received: 10/27/92

% Moisture: 65 decanted: (Y/N) N Date Extracted: 10/27/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN TRIMETHYLBICYCLOHEPT	6.18	2000	J
2.	00-00-0	UNKNOWN	6.75	1900	J
3.	00-00-0	UNKNOWN	7.95	940	J
4.	00-00-0	UNKNOWN	17.35	2200	J
5.	599-64-4	4-(1-METHYL-1-PHENYLETHYL) P	24.65	1500	JN
6.	00-00-0	UNKNOWN	26.15	990	J
7.	00-00-0	UNKNOWN	26.45	940	J
8.	00-00-0	UNKNOWN	27.15	3700	J
9.	19407-28-4	1,2,3,4,4A,9,10,10A-OCTAHYAR	27.33	1100	JN
10.	00-00-0	UNKNOWN ORGANIC ACID	27.68	1800	J
11.	00-00-0	UNKNOWN	28.30	8600	J
12.	00-00-0	UNKNOWN TETRAMETHYLPHENANTHR	29.17	920	J
13.	00-00-0	UNKNOWN	30.37	2000	J
14.	00-00-0	UNKNOWN	30.43	2700	J
15.	00-00-0	UNKNOWN	30.88	1900	J
16.	00-00-0	UNKNOWN	31.18	1200	J
17.	00-00-0	UNKNOWN	31.77	1300	J
18.	00-00-0	UNKNOWN	31.83	1700	J
19.	00-00-0	UNKNOWN	39.07	5300	J
20.	00-00-0	UNKNOWN	39.15	5500	J

1D

PESTICIDE ORGANICS AN

EPA SAMPLE NO.

FY425

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18221

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

% Moisture: 65 decanted: (Y/N) N Date Received: 10/27/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/27/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4.9	U
319-85-7	beta-BHC	4.9	U
319-86-8	delta-BHC	4.9	U
58-89-9	gamma-BHC (Lindane)	4.9	U
76-44-8	Heptachlor	4.9	U
309-00-2	Aldrin	4.9	U
1024-57-3	Heptachlor epoxide	4.9	U
959-98-8	Endosulfan I	4.9	U
60-57-1	Dieldrin	9.4	U
72-55-9	4,4'-DDE	9.4	U
72-20-8	Endrin	9.4	U
33213-65-9	Endosulfan II	9.4	U
72-54-8	4,4'-DDD	9.4	U
1031-07-8	Endosulfan sulfate	9.4	U
50-29-3	4,4'-DDT	9.4	U
72-43-5	Methoxychlor	49	U
53494-70-5	Endrin ketone	9.4	U
7421-36-3	Endrin aldehyde	9.4	U
5103-71-9	alpha-Chlordane	4.9	U
5103-74-2	gamma-Chlordane	4.9	U
8001-35-2	Toxaphene	490	U
12674-11-2	Aroclor-1016	94	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	94	U
53469-21-9	Aroclor-1242	94	U
12672-29-6	Aroclor-1248	530	
11097-69-1	Aroclor-1254	540	
11096-82-5	Aroclor-1260	260	

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ725

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ725____

Level (low/med): LOW__ Date Received: 10/27/92

% Solids: _33.6

v00005

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27200			P
7440-36-0	Antimony	16.1	B	N	P
7440-38-2	Arsenic	26.4			F
7440-39-3	Barium	259			P
7440-41-7	Beryllium	1.7	B		P
7440-43-9	Cadmium	7.7			P
7440-70-2	Calcium	4200		E	P
7440-47-3	Chromium	32.1			P
7440-48-4	Cobalt	27.6			P
7440-50-8	Copper	46.5			P
7439-89-6	Iron	26600			P
7439-92-1	Lead	137		*	F
7439-95-4	Magnesium	3460			P
7439-96-5	Manganese	450			P
7439-97-6	Mercury	0.26	U		CV
7440-02-0	Nickel	31.5			P
7440-09-7	Potassium	1760	B		P
7782-49-2	Selenium	4.8	U	WN	F
7440-22-4	Silver	1.4	U		P
7440-23-5	Sodium	833	B		P
7440-28-0	Thallium	0.70	U		F
7440-62-2	Vanadium	47.0			P
7440-66-6	Zinc	167		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: FINE__

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY426

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY426V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 29 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	31	
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	12	J
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	9	J
108-90-7	Chlorobenzene	100	
100-41-4	Ethylbenzene	6	J
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	8	J

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY426

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY426V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 29 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	107-01-7	2-BUTENE	3.33	160	JN
2.	557-98-2	2-CHLORO-1-PROPENE	4.48	11	JN
3.	4461-41-0	2-CHLORO-2-BUTENE	6.65	140	JN
4.	563-47-3	3-CHLORO-2-METHYL-1-PROPENE	8.47	93	JN
5.	00-00-0	UNKNOWN ALKANE	9.15	12	J
6.	142-82-5	HEPTANE	10.00	8	JN
7.	00-00-0	UNKNOWN	12.68	11	J
8.	00-00-0	UNKNOWN	15.32	10	J
9.	00-00-0	DICHLORO BUTENE ISOMER	15.62	110	J
10.	00-00-0	UNKNOWN	21.37	28	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY426

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)Ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	J
106-46-7	1,4-Dichlorobenzene	930	
95-50-1	1,2-Dichlorobenzene	37	J
95-48-7	2-Methylphenol	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-Propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(2-Chloroethoxy)Methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	58	J
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-Methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	460	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY426

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-Methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	7900	E
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	180	J
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	U
84-74-2	Di-n-Butylphthalate	460	U
206-44-0	Fluoranthene	96	J
129-00-0	Pyrene	130	J
85-68-7	Butylbenzylphthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	460	U
56-55-3	Benzo(A) anthracene	52	J
218-01-9	Chrysene	97	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1600	B
117-84-0	Di-n-Octylphthalate	460	U
205-99-2	Benzo(b)Fluoranthene	86	J
207-08-9	Benzo(k)Fluoranthene	460	U
50-32-8	Benzo(a)Pyrene	64	J
193-39-5	Indeno(1,2,3-cd)Pyrene	460	U
53-70-3	Dibenz(a,h)Anthracene	460	U
191-24-2	Benzo(g,h,i)Perylene	460	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY426

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.13	970	J
2.	00-00-0	UNKNOWN	6.68	980	JB
3.	00-00-0	UNKNOWN	7.90	790	JB
4.	00-00-0	UNKNOWN	24.52	570	J
5.	00-00-0	UNKNOWN	24.97	490	J
6.	612-94-2	2-PHENYL NAPHTHALENE	26.07	770	JN
7.	00-00-0	UNKNOWN	28.02	1400	J
8.	00-00-0	UNKNOWN	28.15	1900	J
9.	00-00-0	UNKNOWN	30.33	520	J
10.	00-00-0	UNKNOWN	33.18	1200	J
11.	00-00-0	UNKNOWN	33.38	1200	J
12.	00-00-0	UNKNOWN ALKANE	33.90	1600	J
13.	00-00-0	UNKNOWN ALKANE	35.62	4200	J
14.	00-00-0	UNKNOWN	37.25	1700	J
15.	00-00-0	UNKNOWN	37.52	720	J
16.	00-00-0	UNKNOWN	38.80	1100	J
17.	00-00-0	UNKNOWN	39.02	4200	J
18.	00-00-0	UNKNOWN	39.28	720	J
19.	00-00-0	UNKNOWN	39.45	1900	J
20.	00-00-0	UNKNOWN	39.65	1500	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY426DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1900	U
111-44-4	bis(2-Chloroethyl)Ether	1900	U
95-57-8	2-Chlorophenol	1900	U
541-73-1	1,3-Dichlorobenzene	390	DJ
106-46-7	1,4-Dichlorobenzene	780	DJ
95-50-1	1,2-Dichlorobenzene	1900	U
95-48-7	2-Methylphenol	1900	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1900	U
106-44-5	4-Methylphenol	1900	U
621-64-7	N-Nitroso-Di-n-Propylamine	1900	U
67-72-1	Hexachloroethane	1900	U
98-95-3	Nitrobenzene	1900	U
78-59-1	Isophorone	1900	U
88-75-5	2-Nitrophenol	1900	U
105-67-9	2,4-Dimethylphenol	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	1900	U
120-83-2	2,4-Dichlorophenol	1900	U
120-82-1	1,2,4-Trichlorobenzene	1900	U
91-20-3	Naphthalene	1900	U
106-47-8	4-Chloroaniline	1900	U
87-68-3	Hexachlorobutadiene	1900	U
59-50-7	4-Chloro-3-Methylphenol	1900	U
91-57-6	2-Methylnaphthalene	1900	U
77-47-4	Hexachlorocyclopentadiene	1900	U
88-06-2	2,4,6-Trichlorophenol	1900	U
95-95-4	2,4,5-Trichlorophenol	4500	U
91-58-7	2-Chloronaphthalene	1900	U
88-74-4	2-Nitroaniline	4500	U
131-11-3	Dimethylphthalate	1900	U
208-96-8	Acenaphthylene	1900	U
606-20-2	2,6-Dinitrotoluene	1900	U
99-09-2	3-Nitroaniline	4500	U
83-32-9	Acenaphthene	1900	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY426DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500	U
100-02-7	4-Nitrophenol	4500	U
132-64-9	Dibenzofuran	1900	U
121-14-2	2,4-Dinitrotoluene	1900	U
84-66-2	Diethylphthalate	1900	U
7005-72-3	4-Chlorophenyl-phenylether	1900	U
86-73-7	Fluorene	1900	U
100-01-6	4-Nitroaniline	4500	U
534-52-1	4,6-Dinitro-2-Methylphenol	4500	U
86-30-6	N-Nitrosodiphenylamine (1)	1900	U
101-55-3	4-Bromophenyl-phenylether	1900	U
118-74-1	Hexachlorobenzene	10000	D
87-86-5	Pentachlorophenol	4500	U
85-01-8	Phenanthrene	200	DJ
120-12-7	Anthracene	1900	U
86-74-8	Carbazole	1900	U
84-74-2	Di-n-Butylphthalate	1900	U
206-44-0	Fluoranthene	1900	U
129-00-0	Pyrene	200	DJ
85-68-7	Butylbenzylphthalate	1900	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(A) anthracene	1900	U
218-01-9	Chrysene	1900	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1900	BD
117-84-0	Di-n-Octylphthalate	1900	U
205-99-2	Benzo(b)Fluoranthene	1900	U
207-08-9	Benzo(k)Fluoranthene	1900	U
50-32-8	Benzo(a)Pyrene	1900	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1900	U
53-70-3	Dibenz(a,h)Anthracene	1900	U
191-24-2	Benzo(g,h,i)Perylene	1900	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY426DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY426BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY426BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 29 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.13	730	J
2.	00-00-0	UNKNOWN	6.70	1200	JB
3.	00-00-0	UNKNOWN	7.93	560	JB
4.	00-00-0	UNKNOWN	25.02	490	J
5.	00-00-0	UNKNOWN	28.07	2100	J
6.	00-00-0	UNKNOWN	28.20	4800	J
7.	00-00-0	UNKNOWN	29.13	760	J
8.	00-00-0	UNKNOWN	30.38	410	J
9.	00-00-0	UNKNOWN	33.23	680	J
10.	00-00-0	UNKNOWN	33.43	590	J
11.	00-00-0	UNKNOWN	33.95	960	J
12.	00-00-0	UNKNOWN	35.67	1400	J
13.	00-00-0	UNKNOWN	37.28	540	J
14.	00-00-0	UNKNOWN	39.07	5100	J
15.	00-00-0	UNKNOWN	39.48	2400	J
16.	00-00-0	UNKNOWN	39.70	2000	J

PESTICIDE ORGANIC

EPA SAMPLE NO.

FY426

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18363

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

% Moisture: 29 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	12	U
319-85-7	beta-BHC	12	U
319-86-8	delta-BHC	12	U
58-89-9	gamma-BHC (Lindane)	12	U
76-44-8	Heptachlor	12	U
309-00-2	Aldrin	12	U
1024-57-3	Heptachlor epoxide	12	U
959-98-8	Endosulfan I	12	U
60-57-1	Dieldrin	23	U
72-55-9	4,4'-DDE	23	U
72-20-8	Endrin	23	U
33213-65-9	Endosulfan II	23	U
72-54-8	4,4'-DDD	23	U
1031-07-8	Endosulfan sulfate	23	U
50-29-3	4,4'-DDT	23	U
72-43-5	Methoxychlor	120	U
53494-70-5	Endrin ketone	23	U
7421-36-3	Endrin aldehyde	23	U
5103-71-9	alpha-Chlordane	12	U
5103-74-2	gamma-Chlordane	12	U
8001-35-2	Toxaphene	1200	U
12674-11-2	Aroclor-1016	230	U
11104-28-2	Aroclor-1221	470	U
11141-16-5	Aroclor-1232	230	U
53469-21-9	Aroclor-1242	230	U
12672-29-6	Aroclor-1248	230	U
11097-69-1	Aroclor-1254	230	U
11096-82-5	Aroclor-1260	230	U

PESTICIDE ORGANICS ANA

EPA SAMPLE NO.

FY426DL

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18363DL

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

% Moisture: 29 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	120	U
319-85-7	beta-BHC	120	U
319-86-8	delta-BHC	120	U
58-89-9	gamma-BHC (Lindane)	120	U
76-44-8	Heptachlor	120	U
309-00-2	Aldrin	120	U
1024-57-3	Heptachlor epoxide	120	U
959-98-8	Endosulfan I	120	U
60-57-1	Dieldrin	230	U
72-55-9	4,4'-DDE	230	U
72-20-8	Endrin	230	U
33213-65-9	Endosulfan II	230	U
72-54-8	4,4'-DDD	230	U
1031-07-8	Endosulfan sulfate	230	U
50-29-3	4,4'-DDT	230	U
72-43-5	Methoxychlor	1200	U
53494-70-5	Endrin ketone	230	U
7421-36-3	Endrin aldehyde	230	U
5103-71-9	alpha-Chlordane	120	U
5103-74-2	gamma-Chlordane	120	U
8001-35-2	Toxaphene	12000	U
12674-11-2	Aroclor-1016	2300	U
11104-28-2	Aroclor-1221	4700	U
11141-16-5	Aroclor-1232	2300	U
53469-21-9	Aroclor-1242	2300	U
12672-29-6	Aroclor-1248	2300	U
11097-69-1	Aroclor-1254	2300	U
11096-82-5	Aroclor-1260	2300	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ726

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ726____

Level (low/med): LOW__ 000006 Date Received: 10/30/92

% Solids: _71.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4280			P
7440-36-0	Antimony	7.4	B	N	P
7440-38-2	Arsenic	10.7			F
7440-39-3	Barium	66.9			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	8.7			P
7440-70-2	Calcium	1030	B	E	P
7440-47-3	Chromium	6.2			P
7440-48-4	Cobalt	14.0			P
7440-50-8	Copper	9.8			P
7439-89-6	Iron	5280			P
7439-92-1	Lead	64.1		*	F
7439-95-4	Magnesium	623	B		P
7439-96-5	Manganese	172			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.7	B		P
7440-09-7	Potassium	318	B		P
7782-49-2	Selenium	0.23	U	WN	F
7440-22-4	Silver	0.70	U		P
7440-23-5	Sodium	111	B		P
7440-28-0	Thallium	0.33	U		F
7440-62-2	Vanadium	10	B		P
7440-66-6	Zinc	69.9		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY427

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY427V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 26 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	63	
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	14	U
540-59-0	1,2-Dichloroethene (total)	14	U
67-66-3	Chloroform	14	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	18	
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
75-27-4	Bromodichloromethane	14	U
78-87-5	1,2-Dichloropropane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
79-01-6	Trichloroethene	14	U
124-48-1	Dibromochloromethane	14	U
79-00-5	1,1,2-Trichloroethane	14	U
71-43-2	Benzene	2	J
10061-02-6	trans-1,3-Dichloropropene	14	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	16	
108-90-7	Chlorobenzene	170	
100-41-4	Ethylbenzene	4	J
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	15	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY427

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY427V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 26 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4461-41-0	2-CHLORO-2-BUTENE	6.67	11	JN
2.	98-82-8	1-METHYLETHYL BENZENE	19.95	13	JN
3.	00-00-0	UNKNOWN	21.23	82	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY427

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	380	J
106-46-7	1,4-Dichlorobenzene	850	
95-50-1	1,2-Dichlorobenzene	27	J
95-48-7	2-Methylphenol	440	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-Di-n-Propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
111-91-1	bis(2-Chloroethoxy)Methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-Methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY427

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-Methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	4700	E
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	440	U
86-74-8	Carbazole	440	U
84-74-2	Di-n-Butylphthalate	440	U
206-44-0	Fluoranthene	58	J
129-00-0	Pyrene	74	J
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(A) anthracene	38	J
218-01-9	Chrysene	64	J
117-81-7	bis(2-Ethylhexyl)Phthalate	66	BJ
117-84-0	Di-n-Octylphthalate	440	U
205-99-2	Benzo(b)Fluoranthene	55	J
207-08-9	Benzo(k)Fluoranthene	440	U
50-32-8	Benzo(a)Pyrene	47	J
193-39-5	Indeno(1,2,3-cd)Pyrene	440	U
53-70-3	Dibenz(a,h)Anthracene	440	U
191-24-2	Benzo(g,h,i)Perylene	440	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY427

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.17	810	J
2.	00-00-0	UNKNOWN	6.75	930	J
3.	00-00-0	UNKNOWN	7.95	710	JB
4.	00-00-0	UNKNOWN	24.55	450	J
5.	00-00-0	UNKNOWN	25.02	1100	J
6.	00-00-0	UNKNOWN ORGANIC ACID	26.17	1100	J
7.	10544-50-0	SULFUR	26.80	410	JN
8.	00-00-0	UNKNOWN	28.05	1000	J
9.	00-00-0	UNKNOWN	28.20	1500	J
10.	00-00-0	UNKNOWN	32.08	610	J
11.	00-00-0	UNKNOWN	32.60	480	J
12.	00-00-0	UNKNOWN	33.23	680	J
13.	00-00-0	UNKNOWN	33.42	600	J
14.	00-00-0	UNKNOWN	33.93	2200	J
15.	00-00-0	UNKNOWN ALKANE	35.67	6900	J
16.	00-00-0	UNKNOWN	37.28	2200	J
17.	00-00-0	UNKNOWN	37.58	1000	J
18.	00-00-0	UNKNOWN	39.08	6100	J
19.	00-00-0	UNKNOWN	39.48	1100	J
20.	00-00-0	UNKNOWN	39.68	1200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY427DL

b Name: ENCOTEC Contract: 68-D2-0033

ab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1800	U
111-44-4	bis(2-Chloroethyl)Ether	1800	U
95-57-8	2-Chlorophenol	1800	U
541-73-1	1,3-Dichlorobenzene	320	DJ
106-46-7	1,4-Dichlorobenzene	780	DJ
95-50-1	1,2-Dichlorobenzene	1800	U
95-48-7	2-Methylphenol	1800	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800	U
106-44-5	4-Methylphenol	1800	U
621-64-7	N-Nitroso-Di-n-Propylamine	1800	U
67-72-1	Hexachloroethane	1800	U
98-95-3	Nitrobenzene	1800	U
78-59-1	Isophorone	1800	U
88-75-5	2-Nitrophenol	1800	U
105-67-9	2,4-Dimethylphenol	1800	U
111-91-1	bis(2-Chloroethoxy)Methane	1800	U
120-83-2	2,4-Dichlorophenol	1800	U
120-82-1	1,2,4-Trichlorobenzene	1800	U
91-20-3	Naphthalene	1800	U
106-47-8	4-Chloroaniline	1800	U
87-68-3	Hexachlorobutadiene	1800	U
59-50-7	4-Chloro-3-Methylphenol	1800	U
91-57-6	2-Methylnaphthalene	1800	U
77-47-4	Hexachlorocyclopentadiene	1800	U
88-06-2	2,4,6-Trichlorophenol	1800	U
95-95-4	2,4,5-Trichlorophenol	4300	U
91-58-7	2-Chloronaphthalene	1800	U
88-74-4	2-Nitroaniline	4300	U
131-11-3	Dimethylphthalate	1800	U
208-96-8	Acenaphthylene	1800	U
606-20-2	2,6-Dinitrotoluene	1800	U
99-09-2	3-Nitroaniline	4300	U
83-32-9	Acenaphthene	1800	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY427DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4300	U
100-02-7	4-Nitrophenol	4300	U
132-64-9	Dibenzofuran	1800	U
121-14-2	2,4-Dinitrotoluene	1800	U
84-66-2	Diethylphthalate	1800	U
7005-72-3	4-Chlorophenyl-phenylether	1800	U
86-73-7	Fluorene	1800	U
100-01-6	4-Nitroaniline	4300	U
534-52-1	4,6-Dinitro-2-Methylphenol	4300	U
86-30-6	N-Nitrosodiphenylamine (1)	1800	U
101-55-3	4-Bromophenyl-phenylether	1800	U
118-74-1	Hexachlorobenzene	6400	D
87-86-5	Pentachlorophenol	4300	U
85-01-8	Phenanthrene	120	DJ
120-12-7	Anthracene	1800	U
86-74-8	Carbazole	1800	U
84-74-2	Di-n-Butylphthalate	1800	U
206-44-0	Fluoranthene	1800	U
129-00-0	Pyrene	1800	U
85-68-7	Butylbenzylphthalate	1800	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(A) anthracene	1800	U
218-01-9	Chrysene	1800	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1800	U
117-84-0	Di-n-Octylphthalate	1800	U
205-99-2	Benzo(b)Fluoranthene	1800	U
207-08-9	Benzo(k)Fluoranthene	1800	U
50-32-8	Benzo(a)Pyrene	1800	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1800	U
53-70-3	Dibenz(a,h)Anthracene	1800	U
191-24-2	Benzo(g,h,i)Perylene	1800	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY427DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY427BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY427BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 6.8

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.18	620	J
2.	00-00-0	UNKNOWN	6.75	1500	JB
3.	00-00-0	UNKNOWN	7.97	580	JB
4.	00-00-0	UNKNOWN	25.07	1500	J
5.	00-00-0	UNKNOWN	26.17	980	J
6.	00-00-0	UNKNOWN	28.12	1900	J
7.	00-00-0	UNKNOWN ORGANIC ACID	28.25	3000	J
8.	00-00-0	UNKNOWN	29.25	530	J
9.	00-00-0	UNKNOWN	32.67	480	J
10.	00-00-0	UNKNOWN	33.28	570	J
11.	00-00-0	UNKNOWN	33.47	370	J
12.	00-00-0	UNKNOWN	33.98	1800	J
13.	00-00-0	UNKNOWN ALKANE	35.72	4600	J
14.	00-00-0	UNKNOWN	37.37	720	J
15.	00-00-0	UNKNOWN	37.63	670	J
16.	00-00-0	UNKNOWN	38.43	530	J
17.	00-00-0	UNKNOWN	39.10	1000	J
18.	00-00-0	UNKNOWN	39.37	940	J
19.	00-00-0	UNKNOWN	39.53	1800	J
20.	00-00-0	UNKNOWN	39.73	2000	J

PESTICIDE ORGANICS

EPA SAMPLE NO.

FY427

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18364

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

% Moisture: 26 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	11	U
319-85-7	beta-BHC	11	U
319-86-8	delta-BHC	11	U
58-89-9	gamma-BHC (Lindane)	11	U
76-44-8	Heptachlor	11	U
309-00-2	Aldrin	11	U
1024-57-3	Heptachlor epoxide	11	U
959-98-8	Endosulfan I	11	U
60-57-1	Dieldrin	22	U
72-55-9	4,4'-DDE	22	U
72-20-8	Endrin	22	U
33213-65-9	Endosulfan II	22	U
72-54-8	4,4'-DDD	22	U
1031-07-8	Endosulfan sulfate	22	U
50-29-3	4,4'-DDT	22	U
72-43-5	Methoxychlor	110	U
53494-70-5	Endrin ketone	22	U
7421-36-3	Endrin aldehyde	22	U
5103-71-9	alpha-Chlordane	11	U
5103-74-2	gamma-Chlordane	11	U
8001-35-2	Toxaphene	1100	U
12674-11-2	Aroclor-1016	220	U
11104-28-2	Aroclor-1221	450	U
11141-16-5	Aroclor-1232	220	U
53469-21-9	Aroclor-1242	220	U
12672-29-6	Aroclor-1248	220	U
11097-69-1	Aroclor-1254	220	U
11096-82-5	Aroclor-1260	220	U

1D

PESTICIDE ORGANICS ANAI

EPA SAMPLE NO.

FY427DL

) Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18364DL

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

% Moisture: 26 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) Y pH: 6.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	110	U
319-85-7	beta-BHC	110	U
319-86-8	delta-BHC	110	U
58-89-9	gamma-BHC (Lindane)	110	U
76-44-8	Heptachlor	110	U
309-00-2	Aldrin	110	U
1024-57-3	Heptachlor epoxide	110	U
959-98-8	Endosulfan I	110	U
60-57-1	Dieldrin	220	U
72-55-9	4,4'-DDE	220	U
72-20-8	Endrin	220	U
33213-65-9	Endosulfan II	220	U
72-54-8	4,4'-DDD	220	U
1031-07-8	Endosulfan sulfate	220	U
50-29-3	4,4'-DDT	220	U
72-43-5	Methoxychlor	1100	U
53494-70-5	Endrin ketone	220	U
7421-36-3	Endrin aldehyde	220	U
5103-71-9	alpha-Chlordane	110	U
5103-74-2	gamma-Chlordane	110	U
8001-35-2	Toxaphene	11000	U
12674-11-2	Aroclor-1016	2200	U
11104-28-2	Aroclor-1221	4500	U
11141-16-5	Aroclor-1232	2200	U
53469-21-9	Aroclor-1242	2200	U
12672-29-6	Aroclor-1248	2200	U
11097-69-1	Aroclor-1254	2200	U
11096-82-5	Aroclor-1260	2200	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ727

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ727____

Level (low/med): LOW__ 0007 Date Received: 10/30/92

% Solids: _69.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4450			P
7440-36-0	Antimony	9.4	B	N	P
7440-38-2	Arsenic	15.1			F
7440-39-3	Barium	71.8			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	11.4			P
7440-70-2	Calcium	1070	B	E	P
7440-47-3	Chromium	7.2			P
7440-48-4	Cobalt	17.4			P
7440-50-8	Copper	11.9			P
7439-89-6	Iron	5410			P
7439-92-1	Lead	73.0		*	F
7439-95-4	Magnesium	640	B		P
7439-96-5	Manganese	179			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	343	B		P
7782-49-2	Selenium	2.2	U	N	F
7440-22-4	Silver	0.67	U		P
7440-23-5	Sodium	820	B		P
7440-28-0	Thallium	0.35	B		F
7440-62-2	Vanadium	9.7	B		P
7440-66-6	Zinc	102		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY428

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY428V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 39 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20000	U
74-83-9	Bromomethane	20000	U
75-01-4	Vinyl Chloride	20000	U
75-00-3	Chloroethane	20000	U
75-09-2	Methylene Chloride	2600	BJ
67-64-1	Acetone	14000	J
75-15-0	Carbon Disulfide	20000	U
75-35-4	1,1-Dichloroethene	20000	U
75-34-3	1,1-Dichloroethane	20000	U
540-59-0	1,2-Dichloroethene (total)	20000	U
67-66-3	Chloroform	20000	U
107-06-2	1,2-Dichloroethane	20000	U
78-93-3	2-Butanone	20000	U
71-55-6	1,1,1-Trichloroethane	20000	U
56-23-5	Carbon Tetrachloride	20000	U
75-27-4	Bromodichloromethane	20000	U
78-87-5	1,2-Dichloropropane	20000	U
10061-01-5	cis-1,3-Dichloropropene	20000	U
79-01-6	Trichloroethene	40000	
124-48-1	Dibromochloromethane	20000	U
79-00-5	1,1,2-Trichloroethane	41000	
71-43-2	Benzene	20000	U
10061-02-6	trans-1,3-Dichloropropene	20000	U
75-25-2	Bromoform	20000	U
108-10-1	4-Methyl-2-Pentanone	20000	U
591-78-6	2-Hexanone	20000	U
127-18-4	Tetrachloroethene	220000	
79-34-5	1,1,2,2-Tetrachloroethane	33000	
108-88-3	Toluene	4400	J
108-90-7	Chlorobenzene	20000	U
100-41-4	Ethylbenzene	20000	U
100-42-5	Styrene	20000	U
1330-20-7	Xylene (total)	20000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY428

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY428V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 39 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY428

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	16000	U
111-44-4	bis(2-Chloroethyl)Ether	16000	U
95-57-8	2-Chlorophenol	16000	U
541-73-1	1,3-Dichlorobenzene	5400	J
106-46-7	1,4-Dichlorobenzene	6100	J
95-50-1	1,2-Dichlorobenzene	3100	J
95-48-7	2-Methylphenol	16000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	16000	U
106-44-5	4-Methylphenol	16000	U
621-64-7	N-Nitroso-Di-n-Propylamine	16000	U
67-72-1	Hexachloroethane	76000	
98-95-3	Nitrobenzene	16000	U
78-59-1	Isophorone	16000	U
88-75-5	2-Nitrophenol	16000	U
105-67-9	2,4-Dimethylphenol	16000	U
111-91-1	bis(2-Chloroethoxy)Methane	16000	U
120-83-2	2,4-Dichlorophenol	16000	U
120-82-1	1,2,4-Trichlorobenzene	75000	
91-20-3	Naphthalene	50000	
106-47-8	4-Chloroaniline	16000	U
87-68-3	Hexachlorobutadiene	7700000	E
59-50-7	4-Chloro-3-Methylphenol	16000	U
91-57-6	2-Methylnaphthalene	12000	J
77-47-4	Hexachlorocyclopentadiene	16000	U
88-06-2	2,4,6-Trichlorophenol	16000	U
95-95-4	2,4,5-Trichlorophenol	41000	U
91-58-7	2-Chloronaphthalene	16000	U
88-74-4	2-Nitroaniline	41000	U
131-11-3	Dimethylphthalate	16000	U
208-96-8	Acenaphthylene	16000	U
606-20-2	2,6-Dinitrotoluene	16000	U
99-09-2	3-Nitroaniline	41000	U
83-32-9	Acenaphthene	2500	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY428

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	41000	U
100-02-7	4-Nitrophenol	41000	U
132-64-9	Dibenzofuran	16000	U
121-14-2	2,4-Dinitrotoluene	16000	U
84-66-2	Diethylphthalate	16000	U
7005-72-3	4-Chlorophenyl-phenylether	16000	U
86-73-7	Fluorene	16000	U
100-01-6	4-Nitroaniline	41000	U
534-52-1	4,6-Dinitro-2-Methylphenol	41000	U
86-30-6	N-Nitrosodiphenylamine (1)	16000	U
101-55-3	4-Bromophenyl-phenylether	16000	U
118-74-1	Hexachlorobenzene	330000	E
87-86-5	Pentachlorophenol	41000	U
85-01-8	Phenanthrene	240000	E
120-12-7	Anthracene	16000	U
86-74-8	Carbazole	16000	U
84-74-2	Di-n-Butylphthalate	1900	J
206-44-0	Fluoranthene	5700	J
129-00-0	Pyrene	6600	J
85-68-7	Butylbenzylphthalate	16000	U
91-94-1	3,3'-Dichlorobenzidine	16000	U
56-55-3	Benzo(A) anthracene	1300	J
218-01-9	Chrysene	2800	J
117-81-7	bis(2-Ethylhexyl)Phthalate	16000	U
117-84-0	Di-n-Octylphthalate	16000	U
205-99-2	Benzo(b)Fluoranthene	16000	U
207-08-9	Benzo(k)Fluoranthene	16000	U
50-32-8	Benzo(a)Pyrene	16000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	16000	U
53-70-3	Dibenz(a,h)Anthracene	16000	U
191-24-2	Benzo(g,h,i)Perylene	16000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY428

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	TRICHLOROPROPENE ISOMER	7.13	160000	J
2.	00-00-0	UNKNOWN	8.70	46000	J
3.	00-00-0	UNKNOWN	11.28	48000	J
4.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	12.03	95000	JN
5.	00-00-0	UNKNOWN	13.73	130000	J
6.	00-00-0	UNKNOWN	13.93	47000	J
7.	00-00-0	UNKNOWN ALKANE	15.08	210000	J
8.	00-00-0	TETRACHLOROBENZENE ISOMER	15.50	72000	J
9.	00-00-0	UNKNOWN	15.85	79000	J
10.	00-00-0	TETRACHLOROBENZENE ISOMER	16.42	140000	J
11.	92-52-4	1,1'-BIPHENYL	16.50	170000	JN
12.	00-00-0	UNKNOWN ALKANE	17.03	110000	J
13.	643-93-6	3-METHYL-1,1'-BIPHENYL	18.47	50000	JN
14.	00-00-0	UNKNOWN	18.87	65000	J
15.	608-93-5	PENTACHLOROBENZENE	19.15	210000	JN
16.	1812-51-7	2-ETHYL-1,1'-BIPHENYL	20.08	80000	JN
17.	00-00-0	UNKNOWN	21.37	80000	J
18.	605-02-7	1-PHENYL NAPHTHALENE	24.58	48000	JN
19.	00-00-0	UNKNOWN	26.60	150000	J
20.	00-00-0	UNKNOWN	28.07	120000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY428DL

ab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428BR2

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428BR2

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1600000	U
111-44-4	bis(2-Chloroethyl)Ether	1600000	U
95-57-8	2-Chlorophenol	1600000	U
541-73-1	1,3-Dichlorobenzene	1600000	U
106-46-7	1,4-Dichlorobenzene	1600000	U
95-50-1	1,2-Dichlorobenzene	1600000	U
95-48-7	2-Methylphenol	1600000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1600000	U
106-44-5	4-Methylphenol	1600000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1600000	U
67-72-1	Hexachloroethane	1600000	U
98-95-3	Nitrobenzene	1600000	U
78-59-1	Isophorone	1600000	U
88-75-5	2-Nitrophenol	1600000	U
105-67-9	2,4-Dimethylphenol	1600000	U
111-91-1	bis(2-Chloroethoxy)Methane	1600000	U
120-83-2	2,4-Dichlorophenol	1600000	U
120-82-1	1,2,4-Trichlorobenzene	1600000	U
91-20-3	Naphthalene	1600000	U
106-47-8	4-Chloroaniline	1600000	U
87-68-3	Hexachlorobutadiene	10000000	D
59-50-7	4-Chloro-3-Methylphenol	1600000	U
91-57-6	2-Methylnaphthalene	1600000	U
77-47-4	Hexachlorocyclopentadiene	1600000	U
88-06-2	2,4,6-Trichlorophenol	1600000	U
95-95-4	2,4,5-Trichlorophenol	4100000	U
91-58-7	2-Chloronaphthalene	1600000	U
88-74-4	2-Nitroaniline	4100000	U
131-11-3	Dimethylphthalate	1600000	U
208-96-8	Acenaphthylene	1600000	U
606-20-2	2,6-Dinitrotoluene	1600000	U
99-09-2	3-Nitroaniline	4100000	U
83-32-9	Acenaphthene	1600000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY428DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428BR2

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428BR2

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4100000	U
100-02-7	4-Nitrophenol	4100000	U
132-64-9	Dibenzofuran	1600000	U
121-14-2	2,4-Dinitrotoluene	1600000	U
84-66-2	Diethylphthalate	1600000	U
7005-72-3	4-Chlorophenyl-phenylether	1600000	U
86-73-7	Fluorene	1600000	U
100-01-6	4-Nitroaniline	4100000	U
534-52-1	4,6-Dinitro-2-Methylphenol	4100000	U
86-30-6	N-Nitrosodiphenylamine (1)	1600000	U
101-55-3	4-Bromophenyl-phenylether	1600000	U
118-74-1	Hexachlorobenzene	380000	DJ
87-86-5	Pentachlorophenol	4100000	U
85-01-8	Phenanthrene	250000	DJ
120-12-7	Anthracene	1600000	U
86-74-8	Carbazole	1600000	U
84-74-2	Di-n-Butylphthalate	1600000	U
206-44-0	Fluoranthene	1600000	U
129-00-0	Pyrene	160000	DJ
85-68-7	Butylbenzylphthalate	1600000	U
91-94-1	3,3'-Dichlorobenzidine	1600000	U
56-55-3	Benzo(A) anthracene	140000	DJ
218-01-9	Chrysene	230000	DJ
117-81-7	bis(2-Ethylhexyl)Phthalate	1600000	U
117-84-0	Di-n-Octylphthalate	1600000	U
205-99-2	Benzo(b)Fluoranthene	1600000	U
207-08-9	Benzo(k)Fluoranthene	1600000	U
50-32-8	Benzo(a)Pyrene	1600000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1600000	U
53-70-3	Dibenz(a,h)Anthracene	1600000	U
191-24-2	Benzo(g,h,i)Perylene	1600000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY428DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY428BR2

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY428BR2

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 39 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	28.08	630000	J
2.	00-00-0	UNKNOWN	28.20	2400000	J
3.	00-00-0	UNKNOWN	28.62	410000	J
4.	00-00-0	UNKNOWN	28.75	350000	J

PESTICIDE ORGAN: ET

EPA SAMPLE NO.

FY428

Name: ENCOTEC : 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18365

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

% Moisture: 39 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1000

GPC Cleanup: (Y/N) Y pH: 5.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2800	U
319-85-7	beta-BHC	2800	U
319-86-8	delta-BHC	2800	U
58-89-9	gamma-BHC (Lindane)	2800	U
76-44-8	Heptachlor	2800	U
309-00-2	Aldrin	2800	U
1024-57-3	Heptachlor epoxide	2800	U
959-98-8	Endosulfan I	2800	U
60-57-1	Dieldrin	5400	U
72-55-9	4,4'-DDE	5400	U
72-20-8	Endrin	5400	U
33213-65-9	Endosulfan II	5400	U
72-54-8	4,4'-DDD	5400	U
1031-07-8	Endosulfan sulfate	5400	U
50-29-3	4,4'-DDT	5400	U
72-43-5	Methoxychlor	28000	U
53494-70-5	Endrin ketone	5400	U
7421-36-3	Endrin aldehyde	5400	U
5103-71-9	alpha-Chlordane	2800	U
5103-74-2	gamma-Chlordane	2800	U
8001-35-2	Toxaphene	280000	U
12674-11-2	Aroclor-1016	54000	U
11104-28-2	Aroclor-1221	110000	U
11141-16-5	Aroclor-1232	54000	U
53469-21-9	Aroclor-1242	54000	U
12672-29-6	Aroclor-1248	54000	U
11097-69-1	Aroclor-1254	54000	U
11096-82-5	Aroclor-1260	54000	U

PESTICIDE ORGANIC T

EPA SAMPLE NO.

FY428DL

b Name: ENCOTEC 68-D2-0033

o Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18365DL

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

% Moisture: 39 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 10000

GPC Cleanup: (Y/N) Y pH: 5.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	28000	U
319-85-7	beta-BHC	28000	U
319-86-8	delta-BHC	28000	U
58-89-9	gamma-BHC (Lindane)	28000	U
76-44-8	Heptachlor	28000	U
309-00-2	Aldrin	28000	U
1024-57-3	Heptachlor epoxide	28000	U
959-98-8	Endosulfan I	28000	U
60-57-1	Dieldrin	54000	U
72-55-9	4,4'-DDE	54000	U
72-20-8	Endrin	54000	U
33213-65-9	Endosulfan II	54000	U
72-54-8	4,4'-DDD	54000	U
1031-07-8	Endosulfan sulfate	54000	U
50-29-3	4,4'-DDT	54000	U
72-43-5	Methoxychlor	280000	U
53494-70-5	Endrin ketone	54000	U
7421-36-3	Endrin aldehyde	54000	U
5103-71-9	alpha-Chlordane	28000	U
5103-74-2	gamma-Chlordane	28000	U
8001-35-2	Toxaphene	2800000	U
12674-11-2	Aroclor-1016	540000	U
11104-28-2	Aroclor-1221	1100000	U
11141-16-5	Aroclor-1232	540000	U
53469-21-9	Aroclor-1242	540000	U
12672-29-6	Aroclor-1248	540000	U
11097-69-1	Aroclor-1254	540000	U
11096-82-5	Aroclor-1260	540000	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ728

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ728____

Level (low/med): LOW__ v00008 Date Received: 10/30/92

% Solids: _60.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8590			P
7440-36-0	Antimony	21.7		N	P
7440-38-2	Arsenic	10.2			F
7440-39-3	Barium	102			P
7440-41-7	Beryllium	0.56	B		P
7440-43-9	Cadmium	10.3			P
7440-70-2	Calcium	999	B	E	P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	15.4			P
7439-89-6	Iron	7950			P
7439-92-1	Lead	168		*	F
7439-95-4	Magnesium	936	B		P
7439-96-5	Manganese	225			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	7.9	B		P
7440-09-7	Potassium	591	B		P
7782-49-2	Selenium	2.5	U	N	F
7440-22-4	Silver	0.85	U		P
7440-23-5	Sodium	143	B		P
7440-28-0	Thallium	0.36	U	W	F
7440-62-2	Vanadium	16.5			P
7440-66-6	Zinc	80.9		E*	P
	Cyanide				NR

Color Before: BROWN____ Clarity Before: _____ Texture: _____

Color After: BEIGE____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY429

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY429V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 37 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	16	U
75-09-2	Methylene Chloride	8	BJ
67-64-1	Acetone	27	
75-15-0	Carbon Disulfide	16	U
75-35-4	1,1-Dichloroethene	16	U
75-34-3	1,1-Dichloroethane	16	U
540-59-0	1,2-Dichloroethene (total)	16	U
67-66-3	Chloroform	16	U
107-06-2	1,2-Dichloroethane	16	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	16	U
56-23-5	Carbon Tetrachloride	16	U
75-27-4	Bromodichloromethane	16	U
78-87-5	1,2-Dichloropropane	16	U
10061-01-5	cis-1,3-Dichloropropene	16	U
79-01-6	Trichloroethene	16	U
124-48-1	Dibromochloromethane	16	U
79-00-5	1,1,2-Trichloroethane	16	U
71-43-2	Benzene	2	J
10061-02-6	trans-1,3-Dichloropropene	16	U
75-25-2	Bromoform	16	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	16	U
79-34-5	1,1,2,2-Tetrachloroethane	16	U
108-88-3	Toluene	15	J
108-90-7	Chlorobenzene	140	
100-41-4	Ethylbenzene	2	J
100-42-5	Styrene	16	U
1330-20-7	Xylene (total)	9	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY429

ab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY429V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 37 Date Analyzed: 10/30/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4461-41-0	2-CHLORO-2-BUTENE	6.67	10	JN
2.	98-82-8	1-METHYLETHYL BENZENE	19.93	6	JN
3.	00-00-0	UNKNOWN	21.08	49	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY429

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	520	U
111-44-4	bis(2-Chloroethyl)Ether	520	U
95-57-8	2-Chlorophenol	520	U
541-73-1	1,3-Dichlorobenzene	850	
106-46-7	1,4-Dichlorobenzene	600	
95-50-1	1,2-Dichlorobenzene	80	J
95-48-7	2-Methylphenol	520	U
108-60-1	2,2'-oxybis(1-Chloropropane)	520	U
106-44-5	4-Methylphenol	520	U
621-64-7	N-Nitroso-Di-n-Propylamine	520	U
67-72-1	Hexachloroethane	520	U
98-95-3	Nitrobenzene	520	U
78-59-1	Isophorone	520	U
88-75-5	2-Nitrophenol	520	U
105-67-9	2,4-Dimethylphenol	520	U
111-91-1	bis(2-Chloroethoxy)Methane	520	U
120-83-2	2,4-Dichlorophenol	520	U
120-82-1	1,2,4-Trichlorobenzene	2100	
91-20-3	Naphthalene	650	
106-47-8	4-Chloroaniline	520	U
87-68-3	Hexachlorobutadiene	230000	E
59-50-7	4-Chloro-3-Methylphenol	520	U
91-57-6	2-Methylnaphthalene	260	J
77-47-4	Hexachlorocyclopentadiene	520	U
88-06-2	2,4,6-Trichlorophenol	520	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	520	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethylphthalate	520	U
208-96-8	Acenaphthylene	520	U
606-20-2	2,6-Dinitrotoluene	520	U
99-09-2	3-Nitroaniline	1300	U
83-32-9	Acenaphthene	80	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY429

b Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1300	U
100-02-7	4-Nitrophenol	1300	U
132-64-9	Dibenzofuran	520	U
121-14-2	2,4-Dinitrotoluene	520	U
84-66-2	Diethylphthalate	520	U
7005-72-3	4-Chlorophenyl-phenylether	520	U
86-73-7	Fluorene	310	J
100-01-6	4-Nitroaniline	1300	U
534-52-1	4,6-Dinitro-2-Methylphenol	1300	U
86-30-6	N-Nitrosodiphenylamine (1)	520	U
101-55-3	4-Bromophenyl-phenylether	520	U
118-74-1	Hexachlorobenzene	10000	E
87-86-5	Pentachlorophenol	1300	U
85-01-8	Phenanthrene	6200	E
120-12-7	Anthracene	520	U
86-74-8	Carbazole	520	U
84-74-2	Di-n-Butylphthalate	520	U
206-44-0	Fluoranthene	210	J
129-00-0	Pyrene	240	J
85-68-7	Butylbenzylphthalate	520	U
91-94-1	3,3'-Dichlorobenzidine	520	U
56-55-3	Benzo(A) anthracene	58	J
218-01-9	Chrysene	110	J
117-81-7	bis(2-Ethylhexyl)Phthalate	630	B
117-84-0	Di-n-Octylphthalate	520	U
205-99-2	Benzo(b)Fluoranthene	81	J
207-08-9	Benzo(k)Fluoranthene	520	U
50-32-8	Benzo(a)Pyrene	40	J
193-39-5	Indeno(1,2,3-cd)Pyrene	520	U
53-70-3	Dibenz(a,h)Anthracene	520	U
191-24-2	Benzo(g,h,i)Perylene	520	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY429

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

b Name: ENCOTEC Contract: 68-D2-0033

b Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.9

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.85	1500	J
2.	42769-38-0	1,1,3,4-TETRACHLORO-1,3-BUTA	9.05	2800	JN
3.	00-00-0	UNKNOWN ALKANE	10.75	2200	J
4.	55880-77-8	PENTACHLOROBUTADIENE	11.38	2900	JN
5.	00-00-0	UNKNOWN ALKANE	15.17	6100	J
6.	00-00-0	TETRACHLOROBENZENE ISOMER	15.58	2400	J
7.	92-52-4	1,1'-BIPHENYL	16.58	4100	JN
8.	00-00-0	UNKNOWN ALKANE	17.12	3700	J
9.	00-00-0	METHYL-1,1'-BIPHENYL ISOMER	18.55	1400	J
10.	00-00-0	METHYL-1,1'-BIPHENYL ISOMER	18.72	1400	J
11.	608-93-5	PENTACHLOROBENZENE	19.25	7000	JN
12.	1812-51-7	2-ETHYL-1,1'-BIPHENYL	20.18	2500	JN
13.	00-00-0	UNKNOWN	22.55	6600	J
14.	00-00-0	UNKNOWN POLYNUCLEAR AROMATIC	24.68	1500	J
15.	00-00-0	UNKNOWN POLYNUCLEAR AROMATIC	26.25	2600	J
16.	00-00-0	UNKNOWN	27.23	1100	J
17.	00-00-0	UNKNOWN	28.18	3800	J
18.	00-00-0	UNKNOWN	28.30	2500	J
19.	00-00-0	DIPHENYLTHIOPHENE ISOMER	29.22	1700	J
20.	00-00-0	UNKNOWN	34.60	2400	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY429DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	52000	U
111-44-4	bis(2-Chloroethyl)Ether	52000	U
95-57-8	2-Chlorophenol	52000	U
541-73-1	1,3-Dichlorobenzene	52000	U
106-46-7	1,4-Dichlorobenzene	52000	U
95-50-1	1,2-Dichlorobenzene	52000	U
95-48-7	2-Methylphenol	52000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	52000	U
106-44-5	4-Methylphenol	52000	U
621-64-7	N-Nitroso-Di-n-Propylamine	52000	U
67-72-1	Hexachloroethane	52000	U
98-95-3	Nitrobenzene	52000	U
78-59-1	Isophorone	52000	U
88-75-5	2-Nitrophenol	52000	U
105-67-9	2,4-Dimethylphenol	52000	U
111-91-1	bis(2-Chloroethoxy)Methane	52000	U
120-83-2	2,4-Dichlorophenol	52000	U
120-82-1	1,2,4-Trichlorobenzene	52000	U
91-20-3	Naphthalene	52000	U
106-47-8	4-Chloroaniline	52000	U
87-68-3	Hexachlorobutadiene	260000	D
59-50-7	4-Chloro-3-Methylphenol	52000	U
91-57-6	2-Methylnaphthalene	52000	U
77-47-4	Hexachlorocyclopentadiene	52000	U
88-06-2	2,4,6-Trichlorophenol	52000	U
95-95-4	2,4,5-Trichlorophenol	130000	U
91-58-7	2-Chloronaphthalene	52000	U
88-74-4	2-Nitroaniline	130000	U
131-11-3	Dimethylphthalate	52000	U
208-96-8	Acenaphthylene	52000	U
606-20-2	2,6-Dinitrotoluene	52000	U
99-09-2	3-Nitroaniline	130000	U
83-32-9	Acenaphthene	52000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY429DL

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	130000	U
100-02-7	4-Nitrophenol	130000	U
132-64-9	Dibenzofuran	52000	U
121-14-2	2,4-Dinitrotoluene	52000	U
84-66-2	Diethylphthalate	52000	U
7005-72-3	4-Chlorophenyl-phenylether	52000	U
86-73-7	Fluorene	52000	U
100-01-6	4-Nitroaniline	130000	U
534-52-1	4,6-Dinitro-2-Methylphenol	130000	U
86-30-6	N-Nitrosodiphenylamine (1)	52000	U
101-55-3	4-Bromophenyl-phenylether	52000	U
118-74-1	Hexachlorobenzene	12000	DJ
87-86-5	Pentachlorophenol	130000	U
85-01-8	Phenanthrene	7800	DJ
120-12-7	Anthracene	52000	U
86-74-8	Carbazole	52000	U
84-74-2	Di-n-Butylphthalate	52000	U
206-44-0	Fluoranthene	52000	U
129-00-0	Pyrene	52000	U
85-68-7	Butylbenzylphthalate	52000	U
91-94-1	3,3'-Dichlorobenzidine	52000	U
56-55-3	Benzo(A) anthracene	52000	U
218-01-9	Chrysene	52000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	52000	U
117-84-0	Di-n-Octylphthalate	52000	U
205-99-2	Benzo(b)Fluoranthene	52000	U
207-08-9	Benzo(k)Fluoranthene	52000	U
50-32-8	Benzo(a)Pyrene	52000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	52000	U
53-70-3	Dibenz(a,h)Anthracene	52000	U
191-24-2	Benzo(g,h,i)Perylene	52000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY429DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY429BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY429BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.9

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

PESTICIDE ORGANIC

EPA SAMPLE NO.

FY429

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18366

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

% Moisture: 37 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.9 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
319-84-6	alpha-BHC	27	U	
319-85-7	beta-BHC	27	U	
319-86-8	delta-BHC	27	U	
58-89-9	gamma-BHC (Lindane)	27	U	
76-44-8	Heptachlor	27	U	
309-00-2	Aldrin	27	U	
1024-57-3	Heptachlor epoxide	27	U	
959-98-8	Endosulfan I	27	U	
60-57-1	Dieldrin	52	U	
72-55-9	4,4'-DDE	52	U	
72-20-8	Endrin	52	U	
33213-65-9	Endosulfan II	52	U	
72-54-8	4,4'-DDD	52	U	
1031-07-8	Endosulfan sulfate	52	U	
50-29-3	4,4'-DDT	52	U	54
72-43-5	Methoxychlor	270	U	
53494-70-5	Endrin ketone	52	U	
7421-36-3	Endrin aldehyde	52	U	
5103-71-9	alpha-Chlordane	27	U	
5103-74-2	gamma-Chlordane	27	U	
8001-35-2	Toxaphene	2700	U	
12674-11-2	Aroclor-1016	520	U	
11104-28-2	Aroclor-1221	1100	U	
11141-16-5	Aroclor-1232	520	U	
53469-21-9	Aroclor-1242	520	U	
12672-29-6	Aroclor-1248	520	U	
11097-69-1	Aroclor-1254	520	U	
11096-82-5	Aroclor-1260	520	U	

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ729

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ729____

Level (low/med): LOW__ v00009 Date Received: 10/30/92

% Solids: _64.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10500			P
7440-36-0	Antimony	7.0	U	N	P
7440-38-2	Arsenic	8.2			F
7440-39-3	Barium	127			P
7440-41-7	Beryllium	0.82	B		P
7440-43-9	Cadmium	3.0			P
7440-70-2	Calcium	1650		E	P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	15.2	B		P
7440-50-8	Copper	10.8			P
7439-89-6	Iron	12000			P
7439-92-1	Lead	30.0		*	F
7439-95-4	Magnesium	1600			P
7439-96-5	Manganese	436			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	10.4	B		P
7440-09-7	Potassium	977	B		P
7782-49-2	Selenium	2.8	U	WN	F
7440-22-4	Silver	0.83	U		P
7440-23-5	Sodium	161	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	22.6			P
7440-66-6	Zinc	81.6		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY430

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY430VR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 48 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	96 ✓	U
74-83-9	Bromomethane	96	U
75-01-4	Vinyl Chloride	96	U
75-00-3	Chloroethane	96	U
75-09-2	Methylene Chloride	15	J
67-64-1	Acetone	170	
75-15-0	Carbon Disulfide	96	U
75-35-4	1,1-Dichloroethene	96	U
75-34-3	1,1-Dichloroethane	96	U
540-59-0	1,2-Dichloroethene (total)	96	U
67-66-3	Chloroform	96	U
107-06-2	1,2-Dichloroethane	96	U
78-93-3	2-Butanone	38	J
71-55-6	1,1,1-Trichloroethane	96	U
56-23-5	Carbon Tetrachloride	96	U
75-27-4	Bromodichloromethane	96	U
78-87-5	1,2-Dichloropropane	96	U
10061-01-5	cis-1,3-Dichloropropene	96	U
79-01-6	Trichloroethene	96	U
124-48-1	Dibromochloromethane	96	U
79-00-5	1,1,2-Trichloroethane	96	U
71-43-2	Benzene	96	U
10061-02-6	trans-1,3-Dichloropropene	96	U
75-25-2	Bromoform	96	U
108-10-1	4-Methyl-2-Pentanone	96	U
591-78-6	2-Hexanone	96	U
127-18-4	Tetrachloroethene	96	U
79-34-5	1,1,2,2-Tetrachloroethane	96	U
108-88-3	Toluene	84	J
108-90-7	Chlorobenzene	1600	
100-41-4	Ethylbenzene	140	
100-42-5	Styrene	96	U
1330-20-7	Xylene (total)	110	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY430

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430VR

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY430VR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. 48 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	545783-80-8	HEXANE	5.30	150	JN
2.	563-47-3	3-CHLORO-2-METHYL-1-PROPENE	6.90	63	JN
3.	00-00-0	UNKNOWN	12.90	110	J
4.	00-00-0	DICHLORO BUTENE ISOMER	13.15	220	J
5.	98-82-8	1-METHYLETHYL BENZENE	16.87	110	JN
6.	00-00-0	UNKNOWN	18.83	71	J
7.	135-98-8	METHYLPROPYL BENZENE	19.67	52	JN
8.	00-00-0	UNKNOWN ALKANE	21.47	98	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY430

b Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	630	U
111-44-4	bis(2-Chloroethyl)Ether	630	U
95-57-8	2-Chlorophenol	630	U
541-73-1	1,3-Dichlorobenzene	410	J
106-46-7	1,4-Dichlorobenzene	1000	
95-50-1	1,2-Dichlorobenzene	76	J
95-48-7	2-Methylphenol	630	U
108-60-1	2,2'-oxybis(1-Chloropropane)	630	U
106-44-5	4-Methylphenol	630	U
621-64-7	N-Nitroso-Di-n-Propylamine	630	U
67-72-1	Hexachloroethane	630	U
98-95-3	Nitrobenzene	630	U
78-59-1	Isophorone	630	U
88-75-5	2-Nitrophenol	630	U
105-67-9	2,4-Dimethylphenol	630	U
111-91-1	bis(2-Chloroethoxy)Methane	630	U
120-83-2	2,4-Dichlorophenol	630	U
120-82-1	1,2,4-Trichlorobenzene	140	J
91-20-3	Naphthalene	37	J
106-47-8	4-Chloroaniline	630	U
87-68-3	Hexachlorobutadiene	4800	
59-50-7	4-Chloro-3-Methylphenol	630	U
91-57-6	2-Methylnaphthalene	630	U
77-47-4	Hexachlorocyclopentadiene	630	U
88-06-2	2,4,6-Trichlorophenol	630	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	630	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethylphthalate	630	U
208-96-8	Acenaphthylene	630	U
606-20-2	2,6-Dinitrotoluene	630	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	630	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY430

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	630	U
121-14-2	2,4-Dinitrotoluene	630	U
84-66-2	Diethylphthalate	630	U
7005-72-3	4-Chlorophenyl-phenylether	630	U
86-73-7	Fluorene	630	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	630	U
101-55-3	4-Bromophenyl-phenylether	630	U
118-74-1	Hexachlorobenzene	7400	E
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	190	J
120-12-7	Anthracene	630	U
86-74-8	Carbazole	630	U
84-74-2	Di-n-Butylphthalate	630	U
206-44-0	Fluoranthene	54	J
129-00-0	Pyrene	59	J
85-68-7	Butylbenzylphthalate	630	U
91-94-1	3,3'-Dichlorobenzidine	630	U
56-55-3	Benzo(A) anthracene	630	U
218-01-9	Chrysene	630	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5600	BE
117-84-0	Di-n-Octylphthalate	630	U
205-99-2	Benzo(b)Fluoranthene	630	U
207-08-9	Benzo(k)Fluoranthene	630	U
50-32-8	Benzo(a)Pyrene	630	U
193-39-5	Indeno(1,2,3-cd)Pyrene	630	U
53-70-3	Dibenz(a,h)Anthracene	630	U
191-24-2	Benzo(g,h,i)Perylene	630	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY430

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.22	830	J
2.	00-00-0	UNKNOWN	6.78	1200	JB
3.	00-00-0	UNKNOWN	8.00	950	JB
4.	608-93-5	PENTACHLOROBENZENE	19.10	800	JN
5.	00-00-0	UNKNOWN	26.17	730	J
6.	00-00-0	UNKNOWN	28.12	1100	J
7.	00-00-0	UNKNOWN	28.25	1400	J
8.	00-00-0	UNKNOWN	30.42	580	J
9.	00-00-0	UNKNOWN	31.82	640	J
10.	00-00-0	UNKNOWN	33.47	620	J
11.	00-00-0	UNKNOWN	33.93	1500	J
12.	00-00-0	UNKNOWN	35.72	3600	J
13.	00-00-0	UNKNOWN	36.93	1500	J
14.	00-00-0	UNKNOWN	37.35	4500	J
15.	00-00-0	UNKNOWN	37.45	990	J
16.	00-00-0	UNKNOWN	37.53	1100	J
17.	00-00-0	UNKNOWN	39.12	3100	J
18.	00-00-0	UNKNOWN	39.18	3600	J
19.	00-00-0	UNKNOWN	39.53	3100	J
20.	00-00-0	UNKNOWN	39.70	3500	J

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY430DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1300	U
111-44-4	bis(2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1,3-Dichlorobenzene	470	DJ
106-46-7	1,4-Dichlorobenzene	1100	DJ
95-50-1	1,2-Dichlorobenzene	68	DJ
95-48-7	2-Methylphenol	1300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-Di-n-Propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
111-91-1	bis(2-Chloroethoxy)Methane	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
120-82-1	1,2,4-Trichlorobenzene	120	DJ
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	4300	D
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	1300	U
95-95-4	2,4,5-Trichlorophenol	3100	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	3100	U
131-11-3	Dimethylphthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	3100	U
83-32-9	Acenaphthene	1300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY430DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3100	U
100-02-7	4-Nitrophenol	3100	U
132-64-9	Dibenzofuran	1300	U
121-14-2	2,4-Dinitrotoluene	1300	U
84-66-2	Diethylphthalate	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
86-73-7	Fluorene	1300	U
100-01-6	4-Nitroaniline	3100	U
534-52-1	4,6-Dinitro-2-Methylphenol	3100	U
86-30-6	N-Nitrosodiphenylamine (1)	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	7300	D
87-86-5	Pentachlorophenol	3100	U
85-01-8	Phenanthrene	210	DJ
120-12-7	Anthracene	1300	U
86-74-8	Carbazole	1300	U
84-74-2	Di-n-Butylphthalate	1300	U
206-44-0	Fluoranthene	1300	U
129-00-0	Pyrene	1300	U
85-68-7	Butylbenzylphthalate	1300	U
91-94-1	3,3'-Dichlorobenzidine	1300	U
56-55-3	Benzo(A) anthracene	1300	U
218-01-9	Chrysene	1300	U
117-81-7	bis(2-Ethylhexyl)Phthalate	5400	BD
117-84-0	Di-n-Octylphthalate	1300	U
205-99-2	Benzo(b)Fluoranthene	1300	U
207-08-9	Benzo(k)Fluoranthene	1300	U
50-32-8	Benzo(a)Pyrene	1300	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1300	U
53-70-3	Dibenz(a,h)Anthracene	1300	U
191-24-2	Benzo(g,h,i)Perylene	1300	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY430DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY430BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY430BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/29/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	5.65	360	JB
2.	00-00-0	UNKNOWN	6.07	560	J
3.	00-00-0	UNKNOWN	6.63	1300	JB
4.	00-00-0	UNKNOWN	7.87	900	JB
5.	00-00-0	UNKNOWN	9.18	370	J
6.	608-93-5	PENTACHLOROBENZENE	19.00	750	JN
7.	00-00-0	UNKNOWN PHENYLNAPHTHALENE IS	26.07	370	J
8.	29082-74-4	PENTACHLORO (TRICHLOROETHENY	27.07	460	JN
9.	00-00-0	UNKNOWN	28.02	1600	J
10.	00-00-0	UNKNOWN	28.13	2600	J
11.	00-00-0	UNKNOWN	30.32	550	J
12.	00-00-0	UNKNOWN	31.03	560	J
13.	00-00-0	UNKNOWN	31.72	920	J
14.	00-00-0	UNKNOWN	33.37	460	J
15.	00-00-0	UNKNOWN ALKANE	33.88	1200	J
16.	00-00-0	UNKNOWN ALKANE	35.60	1200	J
17.	00-00-0	UNKNOWN	37.25	2900	J
18.	00-00-0	UNKNOWN	39.00	3100	J
19.	00-00-0	UNKNOWN	39.43	4100	J
20.	00-00-0	UNKNOWN	39.63	4700	J

PESTICIDE ORGAI IEET

EPA SAMPLE NO.

FY430

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18367

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

% Moisture: 48 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 5.00

GPC Cleanup: (Y/N) Y pH: 6.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	16	U
319-85-7	beta-BHC	16	U
319-86-8	delta-BHC	16	U
58-89-9	gamma-BHC (Lindane)	16	U
76-44-8	Heptachlor	16	U
309-00-2	Aldrin	16	U
1024-57-3	Heptachlor epoxide	16	U
959-98-8	Endosulfan I	16	U
60-57-1	Dieldrin	32	U
72-55-9	4,4'-DDE	32	U
72-20-8	Endrin	32	U
33213-65-9	Endosulfan II	32	U
72-54-8	4,4'-DDD	32	U
1031-07-8	Endosulfan sulfate	32	U
50-29-3	4,4'-DDT	32	U
72-43-5	Methoxychlor	160	U
53494-70-5	Endrin ketone	32	U
7421-36-3	Endrin aldehyde	32	U
5103-71-9	alpha-Chlordane	16	U
5103-74-2	gamma-Chlordane	16	U
8001-35-2	Toxaphene	1600	U
12674-11-2	Aroclor-1016	320	U
11104-28-2	Aroclor-1221	640	U
11141-16-5	Aroclor-1232	320	U
53469-21-9	Aroclor-1242	320	U
12672-29-6	Aroclor-1248	320	U
11097-69-1	Aroclor-1254	320	U
11096-82-5	Aroclor-1260	320	U

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
MFZ730

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ730____

Level (low/med): LOW__ v00010 Date Received: 10/30/92

% Solids: _61.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12100			P
7440-36-0	Antimony	6.5	U	N	P
7440-38-2	Arsenic	4.3	B		F
7440-39-3	Barium	148			P
7440-41-7	Beryllium	0.90	B		P
7440-43-9	Cadmium	1.0	B		P
7440-70-2	Calcium	2610		E	P
7440-47-3	Chromium	14.8			P
7440-48-4	Cobalt	8.8	B		P
7440-50-8	Copper	11.6			P
7439-89-6	Iron	11900			P
7439-92-1	Lead	24.9		*	F
7439-95-4	Magnesium	1870			P
7439-96-5	Manganese	322			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	10.9	B		P
7440-09-7	Potassium	980	B		P
7782-49-2	Selenium	2.6	U	WN	F
7440-22-4	Silver	0.79	U		P
7440-23-5	Sodium	140	B		P
7440-28-0	Thallium	0.37	U		F
7440-62-2	Vanadium	23.7			P
7440-66-6	Zinc	43.2		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:
ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY431

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY431V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 57 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	28000	U
74-83-9	Bromomethane	28000	U
75-01-4	Vinyl Chloride	28000	U
75-00-3	Chloroethane	28000	U
75-09-2	Methylene Chloride	3900	BJ
67-64-1	Acetone	28000	U
75-15-0	Carbon Disulfide	28000	U
75-35-4	1,1-Dichloroethene	28000	U
75-34-3	1,1-Dichloroethane	28000	U
540-59-0	1,2-Dichloroethene (total)	28000	U
67-66-3	Chloroform	28000	U
107-06-2	1,2-Dichloroethane	28000	U
78-93-3	2-Butanone	28000	U
71-55-6	1,1,1-Trichloroethane	28000	U
56-23-5	Carbon Tetrachloride	28000	U
75-27-4	Bromodichloromethane	28000	U
78-87-5	1,2-Dichloropropane	28000	U
10061-01-5	cis-1,3-Dichloropropene	28000	U
79-01-6	Trichloroethene	36000	
124-48-1	Dibromochloromethane	28000	U
79-00-5	1,1,2-Trichloroethane	28000	U
71-43-2	Benzene	28000	U
10061-02-6	trans-1,3-Dichloropropene	28000	U
75-25-2	Bromoform	28000	U
108-10-1	4-Methyl-2-Pentanone	28000	U
591-78-6	2-Hexanone	28000	U
127-18-4	Tetrachloroethene	220000	
79-34-5	1,1,2,2-Tetrachloroethane	9900	J
108-88-3	Toluene	28000	U
108-90-7	Chlorobenzene	28000	U
100-41-4	Ethylbenzene	28000	U
100-42-5	Styrene	28000	U
1330-20-7	Xylene (total)	28000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY431

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY431V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 57 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY431

Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	23000	U
111-44-4	bis(2-Chloroethyl)Ether	23000	U
95-57-8	2-Chlorophenol	23000	U
541-73-1	1,3-Dichlorobenzene	8300	J
106-46-7	1,4-Dichlorobenzene	8300	J
95-50-1	1,2-Dichlorobenzene	3600	J
95-48-7	2-Methylphenol	23000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	23000	U
106-44-5	4-Methylphenol	23000	U
621-64-7	N-Nitroso-Di-n-Propylamine	23000	U
67-72-1	Hexachloroethane	100000	
98-95-3	Nitrobenzene	23000	U
78-59-1	Isophorone	23000	U
88-75-5	2-Nitrophenol	23000	U
105-67-9	2,4-Dimethylphenol	23000	U
111-91-1	bis(2-Chloroethoxy)Methane	23000	U
120-83-2	2,4-Dichlorophenol	23000	U
120-82-1	1,2,4-Trichlorobenzene	84000	
91-20-3	Naphthalene	49000	
106-47-8	4-Chloroaniline	23000	U
87-68-3	Hexachlorobutadiene	9400000	E
59-50-7	4-Chloro-3-Methylphenol	23000	U
91-57-6	2-Methylnaphthalene	13000	J
77-47-4	Hexachlorocyclopentadiene	23000	U
88-06-2	2,4,6-Trichlorophenol	23000	U
95-95-4	2,4,5-Trichlorophenol	58000	U
91-58-7	2-Chloronaphthalene	23000	U
88-74-4	2-Nitroaniline	58000	U
131-11-3	Dimethylphthalate	23000	U
208-96-8	Acenaphthylene	23000	U
606-20-2	2,6-Dinitrotoluene	23000	U
99-09-2	3-Nitroaniline	58000	U
83-32-9	Acenaphthene	2300	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY431

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	58000	U
100-02-7	4-Nitrophenol	58000	U
132-64-9	Dibenzofuran	23000	U
121-14-2	2,4-Dinitrotoluene	23000	U
84-66-2	Diethylphthalate	23000	U
7005-72-3	4-Chlorophenyl-phenylether	23000	U
86-73-7	Fluorene	13000	J
100-01-6	4-Nitroaniline	58000	U
534-52-1	4,6-Dinitro-2-Methylphenol	58000	U
86-30-6	N-Nitrosodiphenylamine (1)	23000	U
101-55-3	4-Bromophenyl-phenylether	23000	U
118-74-1	Hexachlorobenzene	390000	E
87-86-5	Pentachlorophenol	58000	U
85-01-8	Phenanthrene	300000	E
120-12-7	Anthracene	23000	U
86-74-8	Carbazole	23000	U
84-74-2	Di-n-Butylphthalate	23000	U
206-44-0	Fluoranthene	7500	J
129-00-0	Pyrene	10000	J
85-68-7	Butylbenzylphthalate	23000	U
91-94-1	3,3'-Dichlorobenzidine	23000	U
56-55-3	Benzo(A) anthracene	1500	J
218-01-9	Chrysene	4000	J
117-81-7	bis(2-Ethylhexyl)Phthalate	23000	U
117-84-0	Di-n-Octylphthalate	23000	U
205-99-2	Benzo(b)Fluoranthene	23000	U
207-08-9	Benzo(k)Fluoranthene	23000	U
50-32-8	Benzo(a)Pyrene	23000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	23000	U
53-70-3	Dibenz(a,h)Anthracene	23000	U
191-24-2	Benzo(g,h,i)Perylene	23000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY431

Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	TRICHLOROPROPENE ISOMER	6.95	110000	J
2.	00-00-0	UNKNOWN ALKANE	10.50	110000	J
3.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	11.88	120000	JN
4.	00-00-0	UNKNOWN	13.57	100000	J
5.	00-00-0	UNKNOWN	14.63	86000	J
6.	00-00-0	UNKNOWN ALKANE	14.92	240000	J
7.	00-00-0	TETRACHLOROBENZENE ISOMER	15.33	95000	J
8.	00-00-0	UNKNOWN	15.70	83000	J
9.	00-00-0	UNKNOWN	16.25	130000	J
10.	92-52-4	1,1'-BIPHENYL	16.33	190000	JN
11.	00-00-0	UNKNOWN ALKANE	16.87	150000	J
12.	643-93-6	3-METHYL-1,1'BIPHENYL	18.32	55000	JN
13.	00-00-0	UNKNOWN	18.47	54000	J
14.	00-00-0	UNKNOWN	18.72	80000	J
15.	00-00-0	UNKNOWN	18.98	280000	J
16.	00-00-0	UNKNOWN	21.20	85000	J
17.	00-00-0	UNKNOWN	22.25	300000	J
18.	605-02-7	1-PHENYL NAPHTHALENE	24.42	61000	JN
19.	35465-71-5	2-PHENYL NAPHTHALENE	26.13	220000	JN
20.	00-00-0	UNKNOWN	27.92	210000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY431DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2300000	U
111-44-4	bis(2-Chloroethyl)Ether	2300000	U
95-57-8	2-Chlorophenol	2300000	U
541-73-1	1,3-Dichlorobenzene	2300000	U
106-46-7	1,4-Dichlorobenzene	2300000	U
95-50-1	1,2-Dichlorobenzene	2300000	U
95-48-7	2-Methylphenol	2300000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2300000	U
106-44-5	4-Methylphenol	2300000	U
621-64-7	N-Nitroso-Di-n-Propylamine	2300000	U
67-72-1	Hexachloroethane	2300000	U
98-95-3	Nitrobenzene	2300000	U
78-59-1	Isophorone	2300000	U
88-75-5	2-Nitrophenol	2300000	U
105-67-9	2,4-Dimethylphenol	2300000	U
111-91-1	bis(2-Chloroethoxy)Methane	2300000	U
120-83-2	2,4-Dichlorophenol	2300000	U
120-82-1	1,2,4-Trichlorobenzene	2300000	U
91-20-3	Naphthalene	2300000	U
106-47-8	4-Chloroaniline	2300000	U
87-68-3	Hexachlorobutadiene	11000000	D
59-50-7	4-Chloro-3-Methylphenol	2300000	U
91-57-6	2-Methylnaphthalene	2300000	U
77-47-4	Hexachlorocyclopentadiene	2300000	U
88-06-2	2,4,6-Trichlorophenol	2300000	U
95-95-4	2,4,5-Trichlorophenol	5800000	U
91-58-7	2-Chloronaphthalene	2300000	U
88-74-4	2-Nitroaniline	5800000	U
131-11-3	Dimethylphthalate	2300000	U
208-96-8	Acenaphthylene	2300000	U
606-20-2	2,6-Dinitrotoluene	2300000	U
99-09-2	3-Nitroaniline	5800000	U
83-32-9	Acenaphthene	2300000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY431DL

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5800000	U
100-02-7	4-Nitrophenol	5800000	U
132-64-9	Dibenzofuran	2300000	U
121-14-2	2,4-Dinitrotoluene	2300000	U
84-66-2	Diethylphthalate	2300000	U
7005-72-3	4-Chlorophenyl-phenylether	2300000	U
86-73-7	Fluorene	2300000	U
100-01-6	4-Nitroaniline	5800000	U
534-52-1	4,6-Dinitro-2-Methylphenol	5800000	U
86-30-6	N-Nitrosodiphenylamine (1)	2300000	U
101-55-3	4-Bromophenyl-phenylether	2300000	U
118-74-1	Hexachlorobenzene	470000	DJ
87-86-5	Pentachlorophenol	5800000	U
85-01-8	Phenanthrene	340000	DJ
120-12-7	Anthracene	2300000	U
86-74-8	Carbazole	2300000	U
84-74-2	Di-n-Butylphthalate	2300000	U
206-44-0	Fluoranthene	2300000	U
129-00-0	Pyrene	2300000	U
85-68-7	Butylbenzylphthalate	2300000	U
91-94-1	3,3'-Dichlorobenzidine	2300000	U
56-55-3	Benzo(A) anthracene	2300000	U
218-01-9	Chrysene	2300000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2300000	U
117-84-0	Di-n-Octylphthalate	2300000	U
205-99-2	Benzo(b)Fluoranthene	2300000	U
207-08-9	Benzo(k)Fluoranthene	2300000	U
50-32-8	Benzo(a)Pyrene	2300000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	2300000	U
53-70-3	Dibenz(a,h)Anthracene	2300000	U
191-24-2	Benzo(g,h,i)Perylene	2300000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY431DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY431BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY431BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 57 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D
PESTICIDE ORGANICS ANAL

EPA SAMPLE NO.

FY431

Name: ENCOTEC 0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18368

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

% Moisture: 57 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 5.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	400	U
319-85-7	beta-BHC	400	U
319-86-8	delta-BHC	400	U
58-89-9	gamma-BHC (Lindane)	400	U
76-44-8	Heptachlor	400	U
309-00-2	Aldrin	400	U
1024-57-3	Heptachlor epoxide	400	U
959-98-8	Endosulfan I	400	U
60-57-1	Dieldrin	770	U
72-55-9	4,4'-DDE	770	U
72-20-8	Endrin	770	U
33213-65-9	Endosulfan II	770	U
72-54-8	4,4'-DDD	770	U
1031-07-8	Endosulfan sulfate	770	U
50-29-3	4,4'-DDT	770	U
72-43-5	Methoxychlor	4000	U
53494-70-5	Endrin ketone	770	U
7421-36-3	Endrin aldehyde	770	U
5103-71-9	alpha-Chlordane	400	U
5103-74-2	gamma-Chlordane	400	U
8001-35-2	Toxaphene	40000	U
12674-11-2	Aroclor-1016	7700	U
11104-28-2	Aroclor-1221	16000	U
11141-16-5	Aroclor-1232	7700	U
53469-21-9	Aroclor-1242	7700	U
12672-29-6	Aroclor-1248	7700	U
11097-69-1	Aroclor-1254	7700	U
11096-82-5	Aroclor-1260	7700	U

1D
PESTICIDE ORGANICS AI

EPA SAMPLE NO.

FY431DL

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18368DL

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

% Moisture: 57 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1000

GPC Cleanup: (Y/N) Y pH: 5.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	4000	U
319-85-7	beta-BHC	4000	U
319-86-8	delta-BHC	4000	U
58-89-9	gamma-BHC (Lindane)	4000	U
76-44-8	Heptachlor	4000	U
309-00-2	Aldrin	4000	U
1024-57-3	Heptachlor epoxide	4000	U
959-98-8	Endosulfan I	4000	U
60-57-1	Dieldrin	7700	U
72-55-9	4,4'-DDE	7700	U
72-20-8	Endrin	7700	U
33213-65-9	Endosulfan II	7700	U
72-54-8	4,4'-DDD	7700	U
1031-07-8	Endosulfan sulfate	7700	U
50-29-3	4,4'-DDT	7700	U
72-43-5	Methoxychlor	40000	U
53494-70-5	Endrin ketone	7700	U
7421-36-3	Endrin aldehyde	7700	U
5103-71-9	alpha-Chlordane	4000	U
5103-74-2	gamma-Chlordane	4000	U
8001-35-2	Toxaphene	400000	U
12674-11-2	Aroclor-1016	77000	U
11104-28-2	Aroclor-1221	160000	U
11141-16-5	Aroclor-1232	77000	U
53469-21-9	Aroclor-1242	77000	U
12672-29-6	Aroclor-1248	77000	U
11097-69-1	Aroclor-1254	77000	U
11096-82-5	Aroclor-1260	77000	U

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ731

Lab Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ731____

Level (low/med): LOW__ v00011 Date Received: 10/30/92

% Solids: _52.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9990			P
7440-36-0	Antimony	17.1	B	N	P
7440-38-2	Arsenic	21.7			F
7440-39-3	Barium	141			P
7440-41-7	Beryllium	0.78	B		P
7440-43-9	Cadmium	43.9			P
7440-70-2	Calcium	1600	B	E	P
7440-47-3	Chromium	36.0			P
7440-48-4	Cobalt	30.7			P
7440-50-8	Copper	31.6			P
7439-89-6	Iron	10700			P
7439-92-1	Lead	246		*	F
7439-95-4	Magnesium	1330	B		P
7439-96-5	Manganese	353			P
7439-97-6	Mercury	0.17	U		CV
7440-02-0	Nickel	22.6			P
7440-09-7	Potassium	750	B		P
7782-49-2	Selenium	3.3	U	WN	F
7440-22-4	Silver	0.92	U		P
7440-23-5	Sodium	185	B		P
7440-28-0	Thallium	0.51	B	W	F
7440-62-2	Vanadium	20.5			P
7440-66-6	Zinc	207		E*	P
	Cyanide				NR

Color Before: LT.BROWN_ Clarity Before: _____ Texture: FINE__

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY432

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY432V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 54 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	26000	U
74-83-9	Bromomethane	26000	U
75-01-4	Vinyl Chloride	26000	U
75-00-3	Chloroethane	26000	U
75-09-2	Methylene Chloride	4200	BJ
67-64-1	Acetone	26000	U
75-15-0	Carbon Disulfide	26000	U
75-35-4	1,1-Dichloroethene	26000	U
75-34-3	1,1-Dichloroethane	26000	U
540-59-0	1,2-Dichloroethene (total)	26000	U
67-66-3	Chloroform	26000	U
107-06-2	1,2-Dichloroethane	26000	U
78-93-3	2-Butanone	26000	U
71-55-6	1,1,1-Trichloroethane	26000	U
56-23-5	Carbon Tetrachloride	26000	U
75-27-4	Bromodichloromethane	26000	U
78-87-5	1,2-Dichloropropane	26000	U
10061-01-5	cis-1,3-Dichloropropene	26000	U
79-01-6	Trichloroethene	40000	
124-48-1	Dibromochloromethane	26000	U
79-00-5	1,1,2-Trichloroethane	26000	U
71-43-2	Benzene	26000	U
10061-02-6	trans-1,3-Dichloropropene	26000	U
75-25-2	Bromoform	26000	U
108-10-1	4-Methyl-2-Pentanone	26000	U
591-78-6	2-Hexanone	26000	U
127-18-4	Tetrachloroethene	210000	
79-34-5	1,1,2,2-Tetrachloroethane	8000	J
108-88-3	Toluene	26000	U
108-90-7	Chlorobenzene	26000	U
100-41-4	Ethylbenzene	26000	U
100-42-5	Styrene	26000	U
1330-20-7	Xylene (total)	26000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY432

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY432V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 54 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 10.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY432

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	22000	U
111-44-4	bis(2-Chloroethyl)Ether	22000	U
95-57-8	2-Chlorophenol	22000	U
541-73-1	1,3-Dichlorobenzene	7200	J
106-46-7	1,4-Dichlorobenzene	7600	J
95-50-1	1,2-Dichlorobenzene	3100	J
95-48-7	2-Methylphenol	22000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	22000	U
106-44-5	4-Methylphenol	22000	U
621-64-7	N-Nitroso-Di-n-Propylamine	22000	U
67-72-1	Hexachloroethane	110000	
98-95-3	Nitrobenzene	22000	U
78-59-1	Isophorone	22000	U
88-75-5	2-Nitrophenol	22000	U
105-67-9	2,4-Dimethylphenol	22000	U
111-91-1	bis(2-Chloroethoxy)Methane	22000	U
120-83-2	2,4-Dichlorophenol	22000	U
120-82-1	1,2,4-Trichlorobenzene	81000	
91-20-3	Naphthalene	46000	
106-47-8	4-Chloroaniline	22000	U
87-68-3	Hexachlorobutadiene	9100000	E
59-50-7	4-Chloro-3-Methylphenol	22000	U
91-57-6	2-Methylnaphthalene	12000	J
77-47-4	Hexachlorocyclopentadiene	22000	U
88-06-2	2,4,6-Trichlorophenol	22000	U
95-95-4	2,4,5-Trichlorophenol	54000	U
91-58-7	2-Chloronaphthalene	22000	U
88-74-4	2-Nitroaniline	54000	U
131-11-3	Dimethylphthalate	22000	U
208-96-8	Acenaphthylene	22000	U
606-20-2	2,6-Dinitrotoluene	22000	U
99-09-2	3-Nitroaniline	54000	U
83-32-9	Acenaphthene	22000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY432

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	54000	U
100-02-7	4-Nitrophenol	54000	U
132-64-9	Dibenzofuran	22000	U
121-14-2	2,4-Dinitrotoluene	22000	U
84-66-2	Diethylphthalate	22000	U
7005-72-3	4-Chlorophenyl-phenylether	22000	U
86-73-7	Fluorene	22000	U
100-01-6	4-Nitroaniline	54000	U
534-52-1	4,6-Dinitro-2-Methylphenol	54000	U
86-30-6	N-Nitrosodiphenylamine (1)	22000	U
101-55-3	4-Bromophenyl-phenylether	22000	U
118-74-1	Hexachlorobenzene	330000	E
87-86-5	Pentachlorophenol	54000	U
85-01-8	Phenanthrene	270000	E
120-12-7	Anthracene	22000	U
86-74-8	Carbazole	22000	U
84-74-2	Di-n-Butylphthalate	22000	U
206-44-0	Fluoranthene	6900	J
129-00-0	Pyrene	7900	J
85-68-7	Butylbenzylphthalate	22000	U
91-94-1	3,3'-Dichlorobenzidine	22000	U
56-55-3	Benzo(A) anthracene	1900	J
218-01-9	Chrysene	2700	J
117-81-7	bis(2-Ethylhexyl)Phthalate	22000	U
117-84-0	Di-n-Octylphthalate	22000	U
205-99-2	Benzo(b)Fluoranthene	22000	U
207-08-9	Benzo(k)Fluoranthene	22000	U
50-32-8	Benzo(a)Pyrene	22000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	22000	U
53-70-3	Dibenz(a,h)Anthracene	22000	U
191-24-2	Benzo(g,h,i)Perylene	22000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY432

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.8

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	TRICHLOROPROPENE ISOMER	7.05	120000	J
2.	00-00-0	UNKNOWN ALKANE	10.58	100000	J
3.	00-00-0	UNKNOWN	11.22	64000	J
4.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	11.97	120000	JN
5.	00-00-0	UNKNOWN	13.65	110000	J
6.	00-00-0	UNKNOWN ALKANE	15.02	200000	J
7.	00-00-0	TETRACHLOROBENZENE ISOMER	15.42	82000	J
8.	00-00-0	UNKNOWN	15.78	79000	J
9.	00-00-0	TETRACHLOROBENZENE ISOMER	16.35	130000	J
10.	92-52-4	1,1'-BIPHENYL	16.43	170000	JN
11.	00-00-0	UNKNOWN ALKANE	16.95	120000	J
12.	232-95-1	3-METHYL-1,1'BIPHENYL	18.40	54000	JN
13.	00-00-0	UNKNOWN	18.80	66000	J
14.	00-00-0	UNKNOWN	19.07	240000	J
15.	1812-51-7	2-EHTHYL-1,1'-BIPHENYL	20.02	82000	JN
16.	00-00-0	UNKNOWN	21.28	70000	J
17.	103-30-0	1,1'-(1,2-ETHENEDIYL)BIS-,(E	22.33	270000	JN
18.	612-94-2	2-PHENYL NAPHTHALENE	26.08	160000	JN
19.	00-00-0	UNKNOWN	27.07	58000	J
20.	00-00-0	UNKNOWN	28.02	160000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY432DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200000	U
111-44-4	bis(2-Chloroethyl)Ether	2200000	U
95-57-8	2-Chlorophenol	2200000	U
541-73-1	1,3-Dichlorobenzene	2200000	U
106-46-7	1,4-Dichlorobenzene	2200000	U
95-50-1	1,2-Dichlorobenzene	2200000	U
95-48-7	2-Methylphenol	2200000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2200000	U
106-44-5	4-Methylphenol	2200000	U
621-64-7	N-Nitroso-Di-n-Propylamine	2200000	U
67-72-1	Hexachloroethane	2200000	U
98-95-3	Nitrobenzene	2200000	U
78-59-1	Isophorone	2200000	U
88-75-5	2-Nitrophenol	2200000	U
105-67-9	2,4-Dimethylphenol	2200000	U
111-91-1	bis(2-Chloroethoxy)Methane	2200000	U
120-83-2	2,4-Dichlorophenol	2200000	U
120-82-1	1,2,4-Trichlorobenzene	2200000	U
91-20-3	Naphthalene	2200000	U
106-47-8	4-Chloroaniline	2200000	U
87-68-3	Hexachlorobutadiene	12000000	D
59-50-7	4-Chloro-3-Methylphenol	2200000	U
91-57-6	2-Methylnaphthalene	2200000	U
77-47-4	Hexachlorocyclopentadiene	2200000	U
88-06-2	2,4,6-Trichlorophenol	2200000	U
95-95-4	2,4,5-Trichlorophenol	5400000	U
91-58-7	2-Chloronaphthalene	2200000	U
88-74-4	2-Nitroaniline	5400000	U
131-11-3	Dimethylphthalate	2200000	U
208-96-8	Acenaphthylene	2200000	U
606-20-2	2,6-Dinitrotoluene	2200000	U
99-09-2	3-Nitroaniline	5400000	U
83-32-9	Acenaphthene	2200000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY432DL

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5400000	U
100-02-7	4-Nitrophenol	5400000	U
132-64-9	Dibenzofuran	2200000	U
121-14-2	2,4-Dinitrotoluene	2200000	U
84-66-2	Diethylphthalate	2200000	U
7005-72-3	4-Chlorophenyl-phenylether	2200000	U
86-73-7	Fluorene	2200000	U
100-01-6	4-Nitroaniline	5400000	U
534-52-1	4,6-Dinitro-2-Methylphenol	5400000	U
86-30-6	N-Nitrosodiphenylamine (1)	2200000	U
101-55-3	4-Bromophenyl-phenylether	2200000	U
118-74-1	Hexachlorobenzene	460000	DJ
87-86-5	Pentachlorophenol	5400000	U
85-01-8	Phenanthrene	270000	DJ
120-12-7	Anthracene	2200000	U
86-74-8	Carbazole	2200000	U
84-74-2	Di-n-Butylphthalate	2200000	U
206-44-0	Fluoranthene	2200000	U
129-00-0	Pyrene	2200000	U
85-68-7	Butylbenzylphthalate	2200000	U
91-94-1	3,3'-Dichlorobenzidine	2200000	U
56-55-3	Benzo(A) anthracene	2200000	U
218-01-9	Chrysene	2200000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2200000	U
117-84-0	Di-n-Octylphthalate	2200000	U
205-99-2	Benzo(b)Fluoranthene	2200000	U
207-08-9	Benzo(k)Fluoranthene	2200000	U
50-32-8	Benzo(a)Pyrene	2200000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	2200000	U
53-70-3	Dibenz(a,h)Anthracene	2200000	U
191-24-2	Benzo(g,h,i)Perylene	2200000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY432DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY432BR1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY432BR1

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 54 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/08/92

Injection Volume: 2.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.8

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1I

PESTICIDE ORGANICS A

EPA SAMPLE NO.

FY432

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18369

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

% Moisture: 54 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 5.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	370	U
319-85-7	beta-BHC	370	U
319-86-8	delta-BHC	370	U
58-89-9	gamma-BHC (Lindane)	370	U
76-44-8	Heptachlor	370	U
309-00-2	Aldrin	370	U
1024-57-3	Heptachlor epoxide	370	U
959-98-8	Endosulfan I	370	U
60-57-1	Dieldrin	720	U
72-55-9	4,4'-DDE	720	U
72-20-8	Endrin	720	U
33213-65-9	Endosulfan II	720	U
72-54-8	4,4'-DDD	720	U
1031-07-8	Endosulfan sulfate	720	U
50-29-3	4,4'-DDT	720	U
72-43-5	Methoxychlor	3700	U
53494-70-5	Endrin ketone	720	U
7421-36-3	Endrin aldehyde	720	U
5103-71-9	alpha-Chlordane	370	U
5103-74-2	gamma-Chlordane	370	U
8001-35-2	Toxaphene	37000	U
12674-11-2	Aroclor-1016	7200	U
11104-28-2	Aroclor-1221	15000	U
11141-16-5	Aroclor-1232	7200	U
53469-21-9	Aroclor-1242	7200	U
12672-29-6	Aroclor-1248	7200	U
11097-69-1	Aroclor-1254	7200	U
11096-82-5	Aroclor-1260	7200	U

PESTICIDE ORGANICS ANALYS

EPA SAMPLE NO.

FY432DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18369DL

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

% Moisture: 54 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1000

GPC Cleanup: (Y/N) Y pH: 5.8 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3700	U
319-85-7	beta-BHC	3700	U
319-86-8	delta-BHC	3700	U
58-89-9	gamma-BHC (Lindane)	3700	U
76-44-8	Heptachlor	3700	U
309-00-2	Aldrin	3700	U
1024-57-3	Heptachlor epoxide	3700	U
959-98-8	Endosulfan I	3700	U
60-57-1	Dieldrin	7200	U
72-55-9	4,4'-DDE	7200	U
72-20-8	Endrin	7200	U
33213-65-9	Endosulfan II	7200	U
72-54-8	4,4'-DDD	7200	U
1031-07-8	Endosulfan sulfate	7200	U
50-29-3	4,4'-DDT	7200	U
72-43-5	Methoxychlor	37000	U
53494-70-5	Endrin ketone	7200	U
7421-36-3	Endrin aldehyde	7200	U
5103-71-9	alpha-Chlordane	3700	U
5103-74-2	gamma-Chlordane	3700	U
8001-35-2	Toxaphene	370000	U
12674-11-2	Aroclor-1016	72000	U
11104-28-2	Aroclor-1221	150000	U
11141-16-5	Aroclor-1232	72000	U
53469-21-9	Aroclor-1242	72000	U
12672-29-6	Aroclor-1248	72000	U
11097-69-1	Aroclor-1254	72000	U
11096-82-5	Aroclor-1260	72000	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ732

Lab Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ732____

Level (low/med): LOW__ 000012 Date Received: 10/30/92

% Solids: _49.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10900			P
7440-36-0	Antimony	18.7	B	N	P
7440-38-2	Arsenic	21.6			F
7440-39-3	Barium	166			P
7440-41-7	Beryllium	0.58	B		P
7440-43-9	Cadmium	62.3			P
7440-70-2	Calcium	1970	B	E	P
7440-47-3	Chromium	15.9			P
7440-48-4	Cobalt	41.3			P
7440-50-8	Copper	30.9			P
7439-89-6	Iron	11500			P
7439-92-1	Lead	212		*	F
7439-95-4	Magnesium	1420	B		P
7439-96-5	Manganese	424			P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	17.7			P
7440-09-7	Potassium	882	B		P
7782-49-2	Selenium	3.4	U	WN	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	213	B		P
7440-28-0	Thallium	0.48	U	W	F
7440-62-2	Vanadium	25.6			P
7440-66-6	Zinc	271		E*	P
	Cyanide				NR

Color Before: LT.BROWN_ Clarity Before: _____ Texture: _____

Color After: LT.BROWN_ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY433

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY433V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 48 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	2300	U
74-83-9	Bromomethane	2300	U
75-01-4	Vinyl Chloride	2300	U
75-00-3	Chloroethane	2300	U
75-09-2	Methylene Chloride	1600	BJ
67-64-1	Acetone	2300	U
75-15-0	Carbon Disulfide	2300	U
75-35-4	1,1-Dichloroethene	2300	U
75-34-3	1,1-Dichloroethane	2300	U
540-59-0	1,2-Dichloroethene (total)	2300	U
67-66-3	Chloroform	2300	U
107-06-2	1,2-Dichloroethane	2300	U
78-93-3	2-Butanone	2300	U
71-55-6	1,1,1-Trichloroethane	2300	U
56-23-5	Carbon Tetrachloride	2300	U
75-27-4	Bromodichloromethane	2300	U
78-87-5	1,2-Dichloropropane	2300	U
10061-01-5	cis-1,3-Dichloropropene	2300	U
79-01-6	Trichloroethene	2300	U
124-48-1	Dibromochloromethane	2300	U
79-00-5	1,1,2-Trichloroethane	2300	U
71-43-2	Benzene	2300	U
10061-02-6	trans-1,3-Dichloropropene	2300	U
75-25-2	Bromoform	2300	U
108-10-1	4-Methyl-2-Pentanone	2300	U
591-78-6	2-Hexanone	2300	U
127-18-4	Tetrachloroethene	2300	U
79-34-5	1,1,2,2-Tetrachloroethane	2300	U
108-88-3	Toluene	2300	U
108-90-7	Chlorobenzene	2300	J
100-41-4	Ethylbenzene	1200	J
100-42-5	Styrene	2300	U
1330-20-7	Xylene (total)	2300	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY433

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433V

Sample wt/vol: 4.0 (g/mL) G Lab File ID: FY433V

Level: (low/med) MED Date Received: 10/29/92

% Moisture: not dec. 48 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 7

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4461-41-0	2-CHLORO-2-BUTENE	6.18	4700	JN
2.	00-00-0	UNKNOWN	6.97	5900	J
3.	00-00-0	UNKNOWN	8.03	1400	J
4.	00-00-0	UNKNOWN	15.27	3400	J
5.	00-00-0	UNKNOWN	19.23	1800	J
6.	00-00-0	UNKNOWN	19.97	1900	J
7.	00-00-0	UNKNOWN	21.25	6900	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY433

b Name: ENCOTEC Contract: 68-D2-0033

ab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	19000	U
111-44-4	bis(2-Chloroethyl)Ether	19000	U
95-57-8	2-Chlorophenol	19000	U
541-73-1	1,3-Dichlorobenzene	4900	J
106-46-7	1,4-Dichlorobenzene	4700	J
95-50-1	1,2-Dichlorobenzene	19000	U
95-48-7	2-Methylphenol	19000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	19000	U
106-44-5	4-Methylphenol	19000	U
621-64-7	N-Nitroso-Di-n-Propylamine	19000	U
67-72-1	Hexachloroethane	19000	U
98-95-3	Nitrobenzene	19000	U
78-59-1	Isophorone	19000	U
88-75-5	2-Nitrophenol	19000	U
105-67-9	2,4-Dimethylphenol	19000	U
111-91-1	bis(2-Chloroethoxy)Methane	19000	U
120-83-2	2,4-Dichlorophenol	19000	U
120-82-1	1,2,4-Trichlorobenzene	13000	J
91-20-3	Naphthalene	19000	U
106-47-8	4-Chloroaniline	19000	U
87-68-3	Hexachlorobutadiene	1400000	E
59-50-7	4-Chloro-3-Methylphenol	19000	U
91-57-6	2-Methylnaphthalene	19000	U
77-47-4	Hexachlorocyclopentadiene	19000	U
88-06-2	2,4,6-Trichlorophenol	19000	U
95-95-4	2,4,5-Trichlorophenol	48000	U
91-58-7	2-Chloronaphthalene	19000	U
88-74-4	2-Nitroaniline	48000	U
131-11-3	Dimethylphthalate	19000	U
208-96-8	Acenaphthylene	19000	U
606-20-2	2,6-Dinitrotoluene	19000	U
99-09-2	3-Nitroaniline	48000	U
83-32-9	Acenaphthene	19000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY433

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	48000	U
100-02-7	4-Nitrophenol	48000	U
132-64-9	Dibenzofuran	19000	U
121-14-2	2,4-Dinitrotoluene	19000	U
84-66-2	Diethylphthalate	19000	U
7005-72-3	4-Chlorophenyl-phenylether	19000	U
86-73-7	Fluorene	19000	U
100-01-6	4-Nitroaniline	48000	U
534-52-1	4,6-Dinitro-2-Methylphenol	48000	U
86-30-6	N-Nitrosodiphenylamine (1)	19000	U
101-55-3	4-Bromophenyl-phenylether	19000	U
118-74-1	Hexachlorobenzene	120000	
87-86-5	Pentachlorophenol	48000	U
85-01-8	Phenanthrene	30000	
120-12-7	Anthracene	19000	U
86-74-8	Carbazole	19000	U
84-74-2	Di-n-Butylphthalate	19000	U
206-44-0	Fluoranthene	1300	J
129-00-0	Pyrene	3000	J
85-68-7	Butylbenzylphthalate	19000	U
91-94-1	3,3'-Dichlorobenzidine	19000	U
56-55-3	Benzo(A) anthracene	19000	U
218-01-9	Chrysene	19000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	19000	U
117-84-0	Di-n-Octylphthalate	19000	U
205-99-2	Benzo(b)Fluoranthene	19000	U
207-08-9	Benzo(k)Fluoranthene	19000	U
50-32-8	Benzo(a)Pyrene	19000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	19000	U
53-70-3	Dibenz(a,h)Anthracene	19000	U
191-24-2	Benzo(g,h,i)Perylene	19000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY433

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433B

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433B

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	8.23	13000	J
2.	00-00-0	UNKNOWN	8.93	18000	J
3.	00-00-0	UNKNOWN	9.43	13000	J
4.	00-00-0	UNKNOWN ALKANE	10.67	13000	J
5.	42769-38-0	1,1,3,4-TETRACHLORO-1,3-BUTA	11.15	14000	JN
6.	00-00-0	UNKNOWN	11.30	15000	J
7.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	12.03	16000	JN
8.	00-00-0	UNKNOWN ALKANE	13.02	32000	J
9.	00-00-0	UNKNOWN ALKANE	15.08	40000	J
10.	00-00-0	TETRACHLOROBENZENE ISOMER	15.48	18000	J
11.	00-00-0	UNKNOWN ALKANE	17.03	31000	J
12.	608-93-5	PENTACHLOROBENZENE	19.10	67000	JN
13.	5814-85-7	1,1'-(1-METHYL-1,2-ETHANEDIY	19.70	8100	JN
14.	1812-51-7	2-ETHYL-1,1'-BIPHENYL	20.08	12000	JN
15.	00-00-0	UNKNOWN	22.32	81000	J
16.	00-00-0	UNKNOWN	23.28	38000	J
17.	605-02-7	1-PHENYL NAPHTHALENE	24.58	16000	JN
18.	612-94-2	2-PHENYL NAPHTHALENE	26.13	20000	JN
19.	00-00-0	UNKNOWN	27.15	15000	J
20.	00-00-0	UNKNOWN	28.08	93000	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FY433DL

b Name: ENCOTEC Contract: 68-D2-0033

b Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433BR

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433BR

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	190000	U
111-44-4	bis(2-Chloroethyl)Ether	190000	U
95-57-8	2-Chlorophenol	190000	U
541-73-1	1,3-Dichlorobenzene	190000	U
106-46-7	1,4-Dichlorobenzene	190000	U
95-50-1	1,2-Dichlorobenzene	190000	U
95-48-7	2-Methylphenol	190000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	190000	U
106-44-5	4-Methylphenol	190000	U
621-64-7	N-Nitroso-Di-n-Propylamine	190000	U
67-72-1	Hexachloroethane	190000	U
98-95-3	Nitrobenzene	190000	U
78-59-1	Isophorone	190000	U
88-75-5	2-Nitrophenol	190000	U
105-67-9	2,4-Dimethylphenol	190000	U
111-91-1	bis(2-Chloroethoxy)Methane	190000	U
120-83-2	2,4-Dichlorophenol	190000	U
120-82-1	1,2,4-Trichlorobenzene	190000	U
91-20-3	Naphthalene	190000	U
106-47-8	4-Chloroaniline	190000	U
87-68-3	Hexachlorobutadiene	1,500,000	D
59-50-7	4-Chloro-3-Methylphenol	190000	U
91-57-6	2-Methylnaphthalene	190000	U
77-47-4	Hexachlorocyclopentadiene	190000	U
88-06-2	2,4,6-Trichlorophenol	190000	U
95-95-4	2,4,5-Trichlorophenol	480000	U
91-58-7	2-Chloronaphthalene	190000	U
88-74-4	2-Nitroaniline	480000	U
131-11-3	Dimethylphthalate	190000	U
208-96-8	Acenaphthylene	190000	U
606-20-2	2,6-Dinitrotoluene	190000	U
99-09-2	3-Nitroaniline	480000	U
83-32-9	Acenaphthene	190000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY433DL

b Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433BR

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433BR

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	480000	U
100-02-7	4-Nitrophenol	480000	U
132-64-9	Dibenzofuran	190000	U
121-14-2	2,4-Dinitrotoluene	190000	U
84-66-2	Diethylphthalate	190000	U
7005-72-3	4-Chlorophenyl-phenylether	190000	U
86-73-7	Fluorene	190000	U
100-01-6	4-Nitroaniline	480000	U
534-52-1	4,6-Dinitro-2-Methylphenol	480000	U
86-30-6	N-Nitrosodiphenylamine (1)	190000	U
101-55-3	4-Bromophenyl-phenylether	190000	U
118-74-1	Hexachlorobenzene	150000	DJ
87-86-5	Pentachlorophenol	480000	U
85-01-8	Phenanthrene	38000	DJ
120-12-7	Anthracene	190000	U
86-74-8	Carbazole	190000	U
84-74-2	Di-n-Butylphthalate	190000	U
206-44-0	Fluoranthene	190000	U
129-00-0	Pyrene	190000	U
85-68-7	Butylbenzylphthalate	190000	U
91-94-1	3,3'-Dichlorobenzidine	190000	U
56-55-3	Benzo(A) anthracene	190000	U
218-01-9	Chrysene	190000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	190000	U
117-84-0	Di-n-Octylphthalate	190000	U
205-99-2	Benzo(b)Fluoranthene	190000	U
207-08-9	Benzo(k)Fluoranthene	190000	U
50-32-8	Benzo(a)Pyrene	190000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	190000	U
53-70-3	Dibenz(a,h)Anthracene	190000	U
191-24-2	Benzo(g,h,i)Perylene	190000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY433DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY433BR

Sample wt/vol: 1.0 (g/mL) G Lab File ID: FY433BR

Level: (low/med) MED Date Received: 10/29/92

% Moisture: 48 decanted: (Y/N) N Date Extracted: 10/31/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 6.3

Number TICs found: 3

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN ALKANE	15.03	43000	J
2.	608-93-5	PENTACHLOROBENZENE	19.03	72000	JN
3.	00-00-0	UNKNOWN	28.05	42000	J

1D

PESTICIDE ORGANICS ANAI

EPA SAMPLE NO.

FY433

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18370

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

% Moisture: 48 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	330	U
319-85-7	beta-BHC	330	U
319-86-8	delta-BHC	330	U
58-89-9	gamma-BHC (Lindane)	330	U
76-44-8	Heptachlor	330	U
309-00-2	Aldrin	330	U
1024-57-3	Heptachlor epoxide	330	U
959-98-8	Endosulfan I	330	U
60-57-1	Dieldrin	630	U
72-55-9	4,4'-DDE	630	U
72-20-8	Endrin	630	U
33213-65-9	Endosulfan II	630	U
72-54-8	4,4'-DDD	630	U
1031-07-8	Endosulfan sulfate	630	U
50-29-3	4,4'-DDT	630	U
72-43-5	Methoxychlor	3300	U
53494-70-5	Endrin ketone	630	U
7421-36-3	Endrin aldehyde	630	U
5103-71-9	alpha-Chlordane	330	U
5103-74-2	gamma-Chlordane	330	U
8001-35-2	Toxaphene	33000	U
12674-11-2	Aroclor-1016	6300	U
11104-28-2	Aroclor-1221	13000	U
11141-16-5	Aroclor-1232	6300	U
53469-21-9	Aroclor-1242	6300	U
12672-29-6	Aroclor-1248	6300	U
11097-69-1	Aroclor-1254	6300	U
11096-82-5	Aroclor-1260	6300	U

PESTICIDE ORGANICS ANA

EPA SAMPLE NO.

FY433DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18370DL

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

% Moisture: 48 decanted: (Y/N) N Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/29/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1000

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3300	U
319-85-7	beta-BHC	3300	U
319-86-8	delta-BHC	3300	U
58-89-9	gamma-BHC (Lindane)	3300	U
76-44-8	Heptachlor	3300	U
309-00-2	Aldrin	3300	U
1024-57-3	Heptachlor epoxide	3300	U
959-98-8	Endosulfan I	3300	U
60-57-1	Dieldrin	6300	U
72-55-9	4,4'-DDE	6300	U
72-20-8	Endrin	6300	U
33213-65-9	Endosulfan II	6300	U
72-54-8	4,4'-DDD	6300	U
1031-07-8	Endosulfan sulfate	6300	U
50-29-3	4,4'-DDT	6300	U
72-43-5	Methoxychlor	33000	U
53494-70-5	Endrin ketone	6300	U
7421-36-3	Endrin aldehyde	6300	U
5103-71-9	alpha-Chlordane	3300	U
5103-74-2	gamma-Chlordane	3300	U
8001-35-2	Toxaphene	330000	U
12674-11-2	Aroclor-1016	63000	U
11104-28-2	Aroclor-1221	130000	U
11141-16-5	Aroclor-1232	63000	U
53469-21-9	Aroclor-1242	63000	U
12672-29-6	Aroclor-1248	63000	U
11097-69-1	Aroclor-1254	63000	U
11096-82-5	Aroclor-1260	63000	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ733

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ733____

Level (low/med): LOW__ 00013 Date Received: 10/30/92

% Solids: _57.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8000			P
7440-36-0	Antimony	7.5	U	N	P
7440-38-2	Arsenic	7.6			F
7440-39-3	Barium	143			P
7440-41-7	Beryllium	0.58	B		P
7440-43-9	Cadmium	9.9			P
7440-70-2	Calcium	1580	B	E	P
7440-47-3	Chromium	10.6			P
7440-48-4	Cobalt	8.8	B		P
7440-50-8	Copper	11.1			P
7439-89-6	Iron	9170			P
7439-92-1	Lead	119		*	F
7439-95-4	Magnesium	1100	B		P
7439-96-5	Manganese	396			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	10.4	B		P
7440-09-7	Potassium	811	B		P
7782-49-2	Selenium	2.8	U	N	F
7440-22-4	Silver	0.90	U		P
7440-23-5	Sodium	161	B		P
7440-28-0	Thallium	0.41	U	W	F
7440-62-2	Vanadium	20.2			P
7440-66-6	Zinc	52.4		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: BEIGE____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY434

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY434V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 37 Date Analyzed: 10/31/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	16	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	16	U
75-15-0	Carbon Disulfide	16	U
75-35-4	1,1-Dichloroethene	16	U
75-34-3	1,1-Dichloroethane	16	U
540-59-0	1,2-Dichloroethene (total)	16	U
67-66-3	Chloroform	16	U
107-06-2	1,2-Dichloroethane	16	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	16	U
56-23-5	Carbon Tetrachloride	16	U
75-27-4	Bromodichloromethane	16	U
78-87-5	1,2-Dichloropropane	16	U
10061-01-5	cis-1,3-Dichloropropene	16	U
79-01-6	Trichloroethene	16	U
124-48-1	Dibromochloromethane	16	U
79-00-5	1,1,2-Trichloroethane	16	U
71-43-2	Benzene	16	U
10061-02-6	trans-1,3-Dichloropropene	16	U
75-25-2	Bromoform	16	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	6	J
79-34-5	1,1,2,2-Tetrachloroethane	16	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	16	U
100-41-4	Ethylbenzene	16	U
100-42-5	Styrene	16	U
1330-20-7	Xylene (total)	2	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY434

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY434V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 37 Date Analyzed: 10/31/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY434

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 500.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	260000	U
111-44-4	bis(2-Chloroethyl)Ether	260000	U
95-57-8	2-Chlorophenol	260000	U
541-73-1	1,3-Dichlorobenzene	260000	U
106-46-7	1,4-Dichlorobenzene	260000	U
95-50-1	1,2-Dichlorobenzene	260000	U
95-48-7	2-Methylphenol	260000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	260000	U
106-44-5	4-Methylphenol	260000	U
621-64-7	N-Nitroso-Di-n-Propylamine	260000	U
67-72-1	Hexachloroethane	260000	U
98-95-3	Nitrobenzene	260000	U
78-59-1	Isophorone	260000	U
88-75-5	2-Nitrophenol	260000	U
105-67-9	2,4-Dimethylphenol	260000	U
111-91-1	bis(2-Chloroethoxy)Methane	260000	U
120-83-2	2,4-Dichlorophenol	260000	U
120-82-1	1,2,4-Trichlorobenzene	260000	U
91-20-3	Naphthalene	260000	U
106-47-8	4-Chloroaniline	260000	U
87-68-3	Hexachlorobutadiene	4600000	E
59-50-7	4-Chloro-3-Methylphenol	260000	U
91-57-6	2-Methylnaphthalene	260000	U
77-47-4	Hexachlorocyclopentadiene	260000	U
88-06-2	2,4,6-Trichlorophenol	260000	U
95-95-4	2,4,5-Trichlorophenol	630000	U
91-58-7	2-Chloronaphthalene	260000	U
88-74-4	2-Nitroaniline	630000	U
131-11-3	Dimethylphthalate	260000	U
208-96-8	Acenaphthylene	260000	U
606-20-2	2,6-Dinitrotoluene	260000	U
99-09-2	3-Nitroaniline	630000	U
83-32-9	Acenaphthene	260000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY434

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 500.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	630000	U
100-02-7	4-Nitrophenol	630000	U
132-64-9	Dibenzofuran	260000	U
121-14-2	2,4-Dinitrotoluene	260000	U
84-66-2	Diethylphthalate	260000	U
7005-72-3	4-Chlorophenyl-phenylether	260000	U
86-73-7	Fluorene	260000	U
100-01-6	4-Nitroaniline	630000	U
534-52-1	4,6-Dinitro-2-Methylphenol	630000	U
86-30-6	N-Nitrosodiphenylamine (1)	260000	U
101-55-3	4-Bromophenyl-phenylether	260000	U
118-74-1	Hexachlorobenzene	250000	J
87-86-5	Pentachlorophenol	630000	U
85-01-8	Phenanthrene	150000	J
120-12-7	Anthracene	260000	U
86-74-8	Carbazole	260000	U
84-74-2	Di-n-Butylphthalate	260000	U
206-44-0	Fluoranthene	260000	U
129-00-0	Pyrene	260000	U
85-68-7	Butylbenzylphthalate	260000	U
91-94-1	3,3'-Dichlorobenzidine	260000	U
56-55-3	Benzo(A) anthracene	260000	U
218-01-9	Chrysene	260000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	260000	U
117-84-0	Di-n-Octylphthalate	260000	U
205-99-2	Benzo(b)Fluoranthene	260000	U
207-08-9	Benzo(k)Fluoranthene	260000	U
50-32-8	Benzo(a)Pyrene	260000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	260000	U
53-70-3	Dibenz(a,h)Anthracene	260000	U
191-24-2	Benzo(g,h,i)Perylene	260000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY434

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 500.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	7.13	54000	J
2.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	12.02	62000	JN
3.	00-00-0	UNKNOWN ALKANE	12.95	100000	J
4.	00-00-0	UNKNOWN ALKANE	15.05	110000	J
5.	92-52-4	1,1'-BIPHENYL	16.47	70000	JN
6.	00-00-0	UNKNOWN ALKANE	17.02	58000	J
7.	608-93-5	PENTACHLOROBENZENE	19.07	150000	JN
8.	833-81-8	1,1'-(1-METHYL-1,2-ETHENDIYL	22.38	56000	JN
9.	00-00-0	UNKNOWN	28.07	62000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY434DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 2000.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000000	U
111-44-4	bis(2-Chloroethyl)Ether	1000000	U
95-57-8	2-Chlorophenol	1000000	U
541-73-1	1,3-Dichlorobenzene	1000000	U
106-46-7	1,4-Dichlorobenzene	1000000	U
95-50-1	1,2-Dichlorobenzene	1000000	U
95-48-7	2-Methylphenol	1000000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1000000	U
106-44-5	4-Methylphenol	1000000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1000000	U
67-72-1	Hexachloroethane	1000000	U
98-95-3	Nitrobenzene	1000000	U
78-59-1	Isophorone	1000000	U
88-75-5	2-Nitrophenol	1000000	U
105-67-9	2,4-Dimethylphenol	1000000	U
111-91-1	bis(2-Chloroethoxy)Methane	1000000	U
120-83-2	2,4-Dichlorophenol	1000000	U
120-82-1	1,2,4-Trichlorobenzene	1000000	U
91-20-3	Naphthalene	1000000	U
106-47-8	4-Chloroaniline	1000000	U
87-68-3	Hexachlorobutadiene	4200000	D
59-50-7	4-Chloro-3-Methylphenol	1000000	U
91-57-6	2-Methylnaphthalene	1000000	U
77-47-4	Hexachlorocyclopentadiene	1000000	U
88-06-2	2,4,6-Trichlorophenol	1000000	U
95-95-4	2,4,5-Trichlorophenol	2500000	U
91-58-7	2-Chloronaphthalene	1000000	U
88-74-4	2-Nitroaniline	2500000	U
131-11-3	Dimethylphthalate	1000000	U
208-96-8	Acenaphthylene	1000000	U
606-20-2	2,6-Dinitrotoluene	1000000	U
99-09-2	3-Nitroaniline	2500000	U
83-32-9	Acenaphthene	1000000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY434DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 2000.0

GPC Cleanup: (Y/N) Y pH: 7.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	2500000	U
100-02-7	4-Nitrophenol	2500000	U
132-64-9	Dibenzofuran	1000000	U
121-14-2	2,4-Dinitrotoluene	1000000	U
84-66-2	Diethylphthalate	1000000	U
7005-72-3	4-Chlorophenyl-phenylether	1000000	U
86-73-7	Fluorene	1000000	U
100-01-6	4-Nitroaniline	2500000	U
534-52-1	4,6-Dinitro-2-Methylphenol	2500000	U
86-30-6	N-Nitrosodiphenylamine (1)	1000000	U
101-55-3	4-Bromophenyl-phenylether	1000000	U
118-74-1	Hexachlorobenzene	160000	DJ
87-86-5	Pentachlorophenol	2500000	U
85-01-8	Phenanthrene	120000	DJ
120-12-7	Anthracene	1000000	U
86-74-8	Carbazole	1000000	U
84-74-2	Di-n-Butylphthalate	1000000	U
206-44-0	Fluoranthene	1000000	U
129-00-0	Pyrene	1000000	U
85-68-7	Butylbenzylphthalate	1000000	U
91-94-1	3,3'-Dichlorobenzidine	1000000	U
56-55-3	Benzo(A) anthracene	1000000	U
218-01-9	Chrysene	1000000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	1000000	U
117-84-0	Di-n-Octylphthalate	1000000	U
205-99-2	Benzo(b)Fluoranthene	1000000	U
207-08-9	Benzo(k)Fluoranthene	1000000	U
50-32-8	Benzo(a)Pyrene	1000000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000000	U
53-70-3	Dibenz(a,h)Anthracene	1000000	U
191-24-2	Benzo(g,h,i)Perylene	1000000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY434DL

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY434BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY434BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 37 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 2000.0

GPC Cleanup: (Y/N) Y pH: 7.2

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1D

PESTICIDE ORGANICS ANALYS

EPA SAMPLE NO.

FY434

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18428

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

% Moisture: 37 decanted: (Y/N) N Date Received: 10/30/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 100

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	270	U
319-85-7	beta-BHC	270	U
319-86-8	delta-BHC	270	U
58-89-9	gamma-BHC (Lindane)	270	U
76-44-8	Heptachlor	270	U
309-00-2	Aldrin	270	U
1024-57-3	Heptachlor epoxide	270	U
959-98-8	Endosulfan I	270	U
60-57-1	Dieldrin	520	U
72-55-9	4,4'-DDE	520	U
72-20-8	Endrin	520	U
33213-65-9	Endosulfan II	520	U
72-54-8	4,4'-DDD	520	U
1031-07-8	Endosulfan sulfate	520	U
50-29-3	4,4'-DDT	520	U
72-43-5	Methoxychlor	2700	U
53494-70-5	Endrin ketone	520	U
7421-36-3	Endrin aldehyde	520	U
5103-71-9	alpha-Chlordane	270	U
5103-74-2	gamma-Chlordane	270	U
8001-35-2	Toxaphene	27000	U
12674-11-2	Aroclor-1016	5200	U
11104-28-2	Aroclor-1221	11000	U
11141-16-5	Aroclor-1232	5200	U
53469-21-9	Aroclor-1242	5200	U
12672-29-6	Aroclor-1248	5200	U
11097-69-1	Aroclor-1254	5200	U
11096-82-5	Aroclor-1260	5200	U

1D

PESTICIDE ORGANICS AN

EPA SAMPLE NO.

FY434DL

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18428DL

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

% Moisture: 37 decanted: (Y/N) N Date Received: 10/30/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1000

GPC Cleanup: (Y/N) Y pH: 7.2 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2700	U
319-85-7	beta-BHC	2700	U
319-86-8	delta-BHC	2700	U
58-89-9	gamma-BHC (Lindane)	2700	U
76-44-8	Heptachlor	2700	U
309-00-2	Aldrin	2700	U
1024-57-3	Heptachlor epoxide	2700	U
959-98-8	Endosulfan I	2700	U
60-57-1	Dieldrin	5200	U
72-55-9	4,4'-DDE	5200	U
72-20-8	Endrin	5200	U
33213-65-9	Endosulfan II	5200	U
72-54-8	4,4'-DDD	5200	U
1031-07-8	Endosulfan sulfate	5200	U
50-29-3	4,4'-DDT	5200	U
72-43-5	Methoxychlor	27000	U
53494-70-5	Endrin ketone	5200	U
7421-36-3	Endrin aldehyde	5200	U
5103-71-9	alpha-Chlordane	2700	U
5103-74-2	gamma-Chlordane	2700	U
8001-35-2	Toxaphene	270000	U
12674-11-2	Aroclor-1016	52000	U
11104-28-2	Aroclor-1221	110000	U
11141-16-5	Aroclor-1232	52000	U
53469-21-9	Aroclor-1242	52000	U
12672-29-6	Aroclor-1248	52000	U
11097-69-1	Aroclor-1254	52000	U
11096-82-5	Aroclor-1260	52000	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ734

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ734____

Level (low/med): LOW__ 00014 Date Received: 10/30/92

% Solids: _74.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3550			P
7440-36-0	Antimony	5.1	U	N	P
7440-38-2	Arsenic	3.8	B		F
7440-39-3	Barium	44.7	B		P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	575	B	E	P
7440-47-3	Chromium	5.3			P
7440-48-4	Cobalt	1.9	U		P
7440-50-8	Copper	3.8	B		P
7439-89-6	Iron	3810			P
7439-92-1	Lead	40.6		*	F
7439-95-4	Magnesium	443	B		P
7439-96-5	Manganese	105			P
7439-97-6	Mercury	0.09	U		CV
7440-02-0	Nickel	3.7	B		P
7440-09-7	Potassium	356	B		P
7782-49-2	Selenium	0.24	U	WN	F
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	93.1	B		P
7440-28-0	Thallium	0.34	U		F
7440-62-2	Vanadium	8.6	B		P
7440-66-6	Zinc	24.3		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: BEIGE____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY435

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY435V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY435V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 25 Date Analyzed: 10/31/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	4	BJ
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-87-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-88-3	Toluene	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Xylene (total)	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY435

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY435V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY435V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 25 Date Analyzed: 10/31/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY435

Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY435BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY435BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-Di-n-Propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
111-91-1	bis(2-Chloroethoxy)Methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	190	J
59-50-7	4-Chloro-3-Methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY435

Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY435BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY435BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-Methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	38	J
120-12-7	Anthracene	440	U
86-74-8	Carbazole	440	U
84-74-2	Di-n-Butylphthalate	45	BJ
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(A) anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)Phthalate	38	BJ
117-84-0	Di-n-Octylphthalate	440	U
205-99-2	Benzo(b)Fluoranthene	440	U
207-08-9	Benzo(k)Fluoranthene	440	U
50-32-8	Benzo(a)Pyrene	440	U
193-39-5	Indeno(1,2,3-cd)Pyrene	440	U
53-70-3	Dibenz(a,h)Anthracene	440	U
191-24-2	Benzo(g,h,i)Perylene	440	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY435

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY435BR1

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY435BR1

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 25 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/06/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	6.17	690	J
2.	00-00-0	UNKNOWN	6.73	930	JB
3.	00-00-0	UNKNOWN ALDOL CONDENSATION	7.95	630	J
4.	00-00-0	UNKNOWN	9.25	270	J
5.	10544-50-0	SULFUR	26.78	260	JN
6.	00-00-0	UNKNOWN	28.17	280	J
7.	00-00-0	UNKNOWN	30.35	350	J
8.	00-00-0	UNKNOWN	31.32	600	J
9.	00-00-0	UNKNOWN ALKANE	32.07	310	J
10.	00-00-0	UNKNOWN	33.22	1800	J
11.	00-00-0	UNKNOWN	33.42	1900	J
12.	00-00-0	UNKNOWN ALKANE	33.92	860	J
13.	00-00-0	UNKNOWN ORGANIC ACID	35.63	1700	J
14.	00-00-0	UNKNOWN ORGANIC ACID	37.28	1000	J
15.	00-00-0	UNKNOWN	38.28	600	J
16.	00-00-0	UNKNOWN	39.07	3600	J
17.	00-00-0	UNKNOWN	39.13	2600	J
18.	00-00-0	UNKNOWN	39.37	410	J
19.	00-00-0	UNKNOWN	39.48	4100	J
20.	00-00-0	UNKNOWN	39.67	1500	J

PESTICIDE ORGANICS ANALYSIS D

EPA SAMPLE NO.

FY435

Lab Name: ENCOTEC Co.

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18429

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

% Moisture: 25 decanted: (Y/N) N Date Received: 10/30/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.3	U
319-85-7	beta-BHC	2.3	U
319-86-8	delta-BHC	2.3	U
58-89-9	gamma-BHC (Lindane)	2.3	U
76-44-8	Heptachlor	2.3	U
309-00-2	Aldrin	2.3	U
1024-57-3	Heptachlor epoxide	2.3	U
959-98-8	Endosulfan I	2.3	U
60-57-1	Dieldrin	4.4	U
72-55-9	4,4'-DDE	4.4	U
72-20-8	Endrin	4.4	U
33213-65-9	Endosulfan II	4.4	U
72-54-8	4,4'-DDD	4.4	U
1031-07-8	Endosulfan sulfate	4.4	U
50-29-3	4,4'-DDT	4.4	U
72-43-5	Methoxychlor	23	U
53494-70-5	Endrin ketone	4.4	U
7421-36-3	Endrin aldehyde	4.4	U
5103-71-9	alpha-Chlordane	2.3	U
5103-74-2	gamma-Chlordane	2.3	U
8001-35-2	Toxaphene	230	U
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	89	U
11141-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	44	U

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ735

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ735____

Level (low/med): LOW__ 00015 Date Received: 10/30/92

% Solids: _71.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3540			P
7440-36-0	Antimony	6.1	U	N	P
7440-38-2	Arsenic	4.2			F
7440-39-3	Barium	105			P
7440-41-7	Beryllium	0.27	U		P
7440-43-9	Cadmium	33.3			P
7440-70-2	Calcium	771	B	E	P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	4.7	B		P
7439-89-6	Iron	4560			P
7439-92-1	Lead	310		*	F
7439-95-4	Magnesium	481	B		P
7439-96-5	Manganese	148			P
7439-97-6	Mercury	0.19			CV
7440-02-0	Nickel	3.3	B		P
7440-09-7	Potassium	405	B		P
7782-49-2	Selenium	0.23	U	WN	F
7440-22-4	Silver	0.73	U		P
7440-23-5	Sodium	83.5	B		P
7440-28-0	Thallium	1.5	B		F
7440-62-2	Vanadium	9.3	B		P
7440-66-6	Zinc	122		E*	P
	Cyanide				NR

Color Before: GREY_____ Clarity Before: _____ Texture: _____

Color After: BEIGE____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY436

b Name: ENCOTEC Contract: 68-D2-0033

b Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY436V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY436V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 46 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	24	
75-15-0	Carbon Disulfide	19	U
75-35-4	1,1-Dichloroethene	19	U
75-34-3	1,1-Dichloroethane	19	U
540-59-0	1,2-Dichloroethene (total)	19	U
67-66-3	Chloroform	19	U
107-06-2	1,2-Dichloroethane	19	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
75-27-4	Bromodichloromethane	19	U
78-87-5	1,2-Dichloropropane	19	U
10061-01-5	cis-1,3-Dichloropropene	19	U
79-01-6	Trichloroethene	19	U
124-48-1	Dibromochloromethane	19	U
79-00-5	1,1,2-Trichloroethane	19	U
71-43-2	Benzene	19	U
10061-02-6	trans-1,3-Dichloropropene	19	U
75-25-2	Bromoform	19	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
108-88-3	Toluene	19	U
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
1330-20-7	Xylene (total)	19	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY436

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY436V

Sample wt/vol: 5.0 (g/mL) G Lab File ID: FY436V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. 46 Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY436

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY436B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY436B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 46 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	610	U
111-44-4	bis(2-Chloroethyl)Ether	610	U
95-57-8	2-Chlorophenol	610	U
541-73-1	1,3-Dichlorobenzene	610	U
106-46-7	1,4-Dichlorobenzene	610	U
95-50-1	1,2-Dichlorobenzene	610	U
95-48-7	2-Methylphenol	610	U
108-60-1	2,2'-oxybis(1-Chloropropane)	610	U
106-44-5	4-Methylphenol	610	U
621-64-7	N-Nitroso-Di-n-Propylamine	610	U
67-72-1	Hexachloroethane	610	U
98-95-3	Nitrobenzene	610	U
78-59-1	Isophorone	610	U
88-75-5	2-Nitrophenol	610	U
105-67-9	2,4-Dimethylphenol	610	U
111-91-1	bis(2-Chloroethoxy)Methane	610	U
120-83-2	2,4-Dichlorophenol	610	U
120-82-1	1,2,4-Trichlorobenzene	610	U
91-20-3	Naphthalene	610	U
106-47-8	4-Chloroaniline	610	U
87-68-3	Hexachlorobutadiene	610	U
59-50-7	4-Chloro-3-Methylphenol	610	U
91-57-6	2-Methylnaphthalene	610	U
77-47-4	Hexachlorocyclopentadiene	610	U
88-06-2	2,4,6-Trichlorophenol	610	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	610	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethylphthalate	610	U
208-96-8	Acenaphthylene	610	U
606-20-2	2,6-Dinitrotoluene	610	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	610	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY436

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY436B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY436B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 46 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	610	U
121-14-2	2,4-Dinitrotoluene	610	U
84-66-2	Diethylphthalate	610	U
7005-72-3	4-Chlorophenyl-phenylether	610	U
86-73-7	Fluorene	610	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-Methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	610	U
101-55-3	4-Bromophenyl-phenylether	610	U
118-74-1	Hexachlorobenzene	610	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	85	J
120-12-7	Anthracene	610	U
86-74-8	Carbazole	610	U
84-74-2	Di-n-Butylphthalate	32	BJ
206-44-0	Fluoranthene	610	U
129-00-0	Pyrene	610	U
85-68-7	Butylbenzylphthalate	610	U
91-94-1	3,3'-Dichlorobenzidine	610	U
56-55-3	Benzo(A) anthracene	610	U
218-01-9	Chrysene	610	U
117-81-7	bis(2-Ethylhexyl)Phthalate	610	U
117-84-0	Di-n-Octylphthalate	610	U
205-99-2	Benzo(b)Fluoranthene	610	U
207-08-9	Benzo(k)Fluoranthene	610	U
50-32-8	Benzo(a)Pyrene	610	U
193-39-5	Indeno(1,2,3-cd)Pyrene	610	U
53-70-3	Dibenz(a,h)Anthracene	610	U
191-24-2	Benzo(g,h,i)Perylene	610	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FY436

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: FY436B

Sample wt/vol: 30.0 (g/mL) G Lab File ID: FY436B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: 46 decanted: (Y/N) N Date Extracted: 10/30/92

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 11/05/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	00-00-0	UNKNOWN	5.82	320	JB
2.	00-00-0	UNKNOWN	6.22	950	J
3.	00-00-0	UNKNOWN	6.77	950	JB
4.	00-00-0	UNKNOWN	8.00	1000	JB
5.	00-00-0	UNKNOWN ALDOL CONDENSATION	9.32	590	J
6.	00-00-0	UNKNOWN	14.00	250	JB
7.	00-00-0	UNKNOWN ORGANIC ACID	26.15	380	J
8.	00-00-0	UNKNOWN	27.67	850	J
9.	00-00-0	UNKNOWN	28.23	920	J
10.	00-00-0	UNKNOWN	33.07	300	J
11.	00-00-0	UNKNOWN	33.93	3100	J
12.	00-00-0	UNKNOWN	34.12	2200	J
13.	00-00-0	UNKNOWN ALKANE	35.70	1100	J
14.	00-00-0	UNKNOWN ALKANE	37.32	880	J
15.	00-00-0	UNKNOWN	37.60	1100	J
16.	00-00-0	UNKNOWN	38.63	1000	J
17.	00-00-0	UNKNOWN	38.72	940	J
18.	00-00-0	UNKNOWN	39.08	3200	J
19.	00-00-0	UNKNOWN	39.17	2400	J
20.	00-00-0	UNKNOWN	39.47	750	J

PESTICIDE ORGANICS

EPA SAMPLE NO.

FY436

Lab Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) SOIL Lab Sample ID: 18430

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

% Moisture: 46 decanted: (Y/N) N Date Received: 10/30/92

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 10/30/92

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 11/05/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.7 Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.1	U
319-85-7	beta-BHC	3.1	U
319-86-8	delta-BHC	3.1	U
58-89-9	gamma-BHC (Lindane)	3.1	U
76-44-8	Heptachlor	3.1	U
309-00-2	Aldrin	3.1	U
1024-57-3	Heptachlor epoxide	3.1	U
959-98-8	Endosulfan I	3.1	U
60-57-1	Dieldrin	6.1	U
72-55-9	4,4'-DDE	6.1	U
72-20-8	Endrin	6.1	U
33213-65-9	Endosulfan II	6.1	U
72-54-8	4,4'-DDD	6.1	U
1031-07-8	Endosulfan sulfate	6.1	U
50-29-3	4,4'-DDT	6.1	U
72-43-5	Methoxychlor	31	U
53494-70-5	Endrin ketone	6.1	U
7421-36-3	Endrin aldehyde	6.1	U
5103-71-9	alpha-Chlordane	3.1	U
5103-74-2	gamma-Chlordane	3.1	U
8001-35-2	Toxaphene	310	U
12674-11-2	Aroclor-1016	61	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	61	U
53469-21-9	Aroclor-1242	61	U
12672-29-6	Aroclor-1248	61	U
11097-69-1	Aroclor-1254	61	U
11096-82-5	Aroclor-1260	61	U

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ736

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): SOIL_ Lab Sample ID: MFZ736____

Level (low/med): LOW__ 00016 Date Received: 10/30/92

% Solids: _69.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14200			P
7440-36-0	Antimony	6.1	U	N	P
7440-38-2	Arsenic	2.2	B	W	F
7440-39-3	Barium	168			P
7440-41-7	Beryllium	1.2	B		P
7440-43-9	Cadmium	0.60	U		P
7440-70-2	Calcium	5370		E	P
7440-47-3	Chromium	18.7			P
7440-48-4	Cobalt	12.3	B		P
7440-50-8	Copper	16.5			P
7439-89-6	Iron	18700			P
7439-92-1	Lead	28.7		*	F
7439-95-4	Magnesium	4670			P
7439-96-5	Manganese	400			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	2220			P
7782-49-2	Selenium	2.5	U	WN	F
7440-22-4	Silver	0.73	U		P
7440-23-5	Sodium	151	B		P
7440-28-0	Thallium	0.36	U	W	F
7440-62-2	Vanadium	31.9			P
7440-66-6	Zinc	69.6		E*	P
	Cyanide				NR

Color Before: BROWN____ Clarity Before: _____ Texture: _____

Color After: BROWN____ Clarity After: _____ Artifacts: YES___

Comments:

ROOTS_____

SURFACE WATER SAMPLES

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW01
FY307

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN018255C56

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. _____ Date Analyzed: 10/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY307

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN018255C56

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. ____ Date Analyzed: 10/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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. DS-SW01

FY307

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GR018255A07

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	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
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY307

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GR018255A07

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	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.

FY307

Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GR018255A07

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/26/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/28/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		LABORATORY ARTIFACT	12.72	2	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW01

FY307

b Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518255

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

% Moisture: decanted: (Y/N) Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/21/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/22/92

Injection Volume: 2.0 (uL) Dilution Factor: 1

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

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	gamma-BHC (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
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
DS-5W01

MFZ607

Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 18930_ SAS No.: _____ SDG No.: MFZ601

Matrix (soil/water): WATER Lab Sample ID: MFZ607____

Level (low/med): LOW__ Date Received: 10/21/92

% 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	3480		EN	P
7440-36-0	Antimony	32.0	U		P
7440-38-2	Arsenic	8.1	B	W	F
7440-39-3	Barium	121	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	21100			P
7440-47-3	Chromium	4.3	B		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	10	B		P
7439-89-6	Iron	3280		N	P
7439-92-1	Lead	9.2		WN	F
7439-95-4	Magnesium	6320			P
7439-96-5	Manganese	621			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.7	B		P
7440-09-7	Potassium	7920			P
7782-49-2	Selenium	1.2	B		F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	384000			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.7	B		P
7440-66-6	Zinc	18.0	B		P
	Cyanide				NR

Color Before: BROWN____ Clarity Before: CLEAR_ Texture: _____

Color After: BROWN____ Clarity After: CLEAR_ Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-5W02

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER / Lab Sample ID: 518252

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN018252C56

Level: (low/med) LOW / Date Received: 10/21/92 /

% Moisture: not dec. ____ Date Analyzed: 10/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0 /

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518252

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN018252C56

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. ____ Date Analyzed: 10/26/92

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW02

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518252

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GH018252B05

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	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
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518252

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GH018252B05

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	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.

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: _____ SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518252

Sample wt/vol: 1000 (g/mL) ML Lab File ID: GH018252B05

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/21/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124-17-4	ETHANOL, 2-(2-BUTOXYETHOXY)-	9.02	2	JN
2.		LABORATORY ARTIFACT	15.75	3	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-5002

FY305

Lab Name: COMPUCHEM,RTP Contract: 68D20034

Lab Code: COMPU Case No.: 18930 SAS No.: SDG No.: FY301

Matrix: (soil/water) WATER Lab Sample ID: 518252

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

% Moisture: decanted: (Y/N) Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/21/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/22/92

Injection Volume: 2.0 (uL) Dilution Factor: 1

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

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	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.0013	JP
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
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
DS-SW02

MFZ605

Lab Name: SVL_ANALYTICAL_INC._____ Contract: 68-D20042_

Lab Code: SILVER Case No.: 18930_ SAS No.: _____ SDG No.: MFZ601

Matrix (soil/water): WATER Lab Sample ID: MFZ605____

Level (low/med): LOW__ Date Received: 10/21/92

% 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	619		EN	P
7440-36-0	Antimony	32.0	U		P
7440-38-2	Arsenic	2.2	B	W	F
7440-39-3	Barium	60.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	15400			P
7440-47-3	Chromium	3.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	4.0	B		P
7439-89-6	Iron	1490		N	P
7439-92-1	Lead	3.6		N	F
7439-95-4	Magnesium	4780	B		P
7439-96-5	Manganese	97.3			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	5.0	B		P
7440-09-7	Potassium	3290	B		P
7782-49-2	Selenium	1.0	U		F
7440-22-4	Silver	4.0	U		P
7440-23-5	Sodium	33900			P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	3.0	U		P
7440-66-6	Zinc	7.4	B		P
	Cyanide				NR

Color Before: BROWN____ Clarity Before: CLEAR_ Texture: _____

Color After: BROWN____ Clarity After: CLEAR_ Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-5W02X
FY437

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437V

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: FY437V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	25	
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	8	J
79-34-5	1,1,2,2-Tetrachloroethane	3	J
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY437

b Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437V

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: FY437V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/05/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs found: 4

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4461-41-0	2-CHLORO-2-BUTENE	5.37	20	JN
2.	1871-57-4	3-CHLORO-2-(CHLOROMETHYL)-1-	13.17	11	JN
3.		UNKNOWN	18.10	16	JB
4.		UNKNOWN	18.60	8	JB

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW02X

FY437

b Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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	3	J
106-46-7	1,4-Dichlorobenzene	3	J
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	4	J
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	92	E
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY437

b Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	0.7	J
117-84-0	Di-n-Octylphthalate	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.

FY437

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437B

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 16

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.68	530	J
2.		UNKNOWN	5.95	8	J
3.		UNKNOWN	7.85	35	J
4.	42769-38-0	1,1,3,4-TETRACHLORO-1,3-BUTA	8.67	5	JN
5.		TRICHLOROBENZENE ISOMER	10.10	4	J
6.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	10.22	7	JN
7.		UNKNOWN	10.95	2	J
8.		UNKNOWN	12.57	4	J
9.		UNKNOWN	14.03	2	J
10.		UNKNOWN	14.73	3	J
11.		UNKNOWN	15.27	2	J
12.		UNKNOWN	15.40	7	J
13.	608-93-5	PENTACHLOROBENZENE	17.88	2	JN
14.	134-62-3	N,N-DIETHYL-3-METHYL BENZAMI	19.08	3	JN
15.		UNKNOWN	20.15	2	J
16.	791-28-6	TRIPHENYL PHOSPHINE OXIDE	31.15	10	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY437DL

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	20	U
111-44-4	bis(2-Chloroethyl)Ether	20	U
95-57-8	2-Chlorophenol	20	U
541-73-1	1,3-Dichlorobenzene	3	JD
106-46-7	1,4-Dichlorobenzene	3	JD
95-50-1	1,2-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
108-60-1	2,2'-oxybis(1-Chloropropane)	20	U
106-44-5	4-Methylphenol	20	U
621-64-7	N-Nitroso-Di-n-Propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	20	U
111-91-1	bis(2-Chloroethoxy)Methane	20	U
120-83-2	2,4-Dichlorophenol	20	U
120-82-1	1,2,4-Trichlorobenzene	4	JD
91-20-3	Naphthalene	20	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	74	D
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	20	U
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	20	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY437DL

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	20	U
121-14-2	2,4-Dinitrotoluene	20	U
84-66-2	Diethylphthalate	20	U
7005-72-3	4-Chlorophenyl-phenylether	20	U
86-73-7	Fluorene	20	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-Butylphthalate	2	BJD
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
85-68-7	Butylbenzylphthalate	20	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(A) anthracene	20	U
218-01-9	Chrysene	20	U
117-81-7	bis(2-Ethylhexyl)Phthalate	20	U
117-84-0	Di-n-Octylphthalate	20	U
205-99-2	Benzo(b)Fluoranthene	20	U
207-08-9	Benzo(k)Fluoranthene	20	U
50-32-8	Benzo(a)Pyrene	20	U
193-39-5	Indeno(1,2,3-cd)Pyrene	20	U
53-70-3	Dibenz(a,h)Anthracene	20	U
191-24-2	Benzo(g,h,i)Perylene	20	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY437DL

b Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY437BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY437BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.78	10	J
2.		UNKNOWN	7.07	6	J
3.	42769-38-0	1,1,3,4-TETRACHLORO-1,3-BUTA	8.90	31	JN
4.	55880-77-8	PENTACHLORO-1,3-BUTADIENE	11.25	7	JN
5.		UNKNOWN	16.47	7	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW02X

FY437

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: 18375

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

% Moisture: decanted: (Y/N) Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 11/02/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/12/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

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

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	gamma-BHC (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
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
DS-SW02X

MFZ737

Lab Name: WADSWORTH_ALERT_LABS_____ Contract: 68D20049__

Lab Code: WADSPA Case No.: 18985_ SAS No.: _____ SDG No.: MFZ641

Matrix (soil/water): WATER Lab Sample ID: MFZ737___

Level (low/med): LOW__ Date Received: 10/30/92

% 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_	384	_		P_
7440-36-0	Antimony_	31.0	U		P_
7440-38-2	Arsenic__	3.0	U	W	F_
7440-39-3	Barium___	69.6	B		P_
7440-41-7	Beryllium	1.0	U		P_
7440-43-9	Cadmium__	3.0	U		P_
7440-70-2	Calcium__	17700	_		P_
7440-47-3	Chromium_	8.0	U		P_
7440-48-4	Cobalt___	7.0	U		P_
7440-50-8	Copper___	9.5	B		P_
7439-89-6	Iron_____	855	_		P_
7439-92-1	Lead_____	2.0	U	W	F_
7439-95-4	Magnesium	5060	_		P_
7439-96-5	Manganese	981	_		P_
7439-97-6	Mercury__	25.0	_		CV
7440-02-0	Nickel___	7.0	U		P_
7440-09-7	Potassium	4520	B		P_
7782-49-2	Selenium_	1.1	B	WN	F_
7440-22-4	Silver___	5.0	U		P_
7440-23-5	Sodium___	38300	_		P_
7440-28-0	Thallium_	4.0	U		F_
7440-62-2	Vanadium_	6.0	U		P_
7440-66-6	Zinc_____	19.0	B		P_
_____	Cyanide__	_____	_		NR
_____	_____	_____	_		__

Color Before: COLORLESS Clarity Before: OPAQUE Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW03

FY438

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY438V

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: FY438V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. Date Analyzed: 11/04/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY438

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY438V

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: FY438V

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: not dec. Date Analyzed: 11/04/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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.
DS-SW03

FY438

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY438B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY438B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: decanted: (Y/N) Date Extracted: 11/03/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY438

ab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY438B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY438B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: decanted: (Y/N) Date Extracted: 11/03/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	2	BJ
117-84-0	Di-n-Octylphthalate	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.

FY438

b Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 18985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: FY438B

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY438B

Level: (low/med) LOW Date Received: 10/30/92

% Moisture: decanted: (Y/N) Date Extracted: 11/03/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/11/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	134-62-3	N,N-DIETHYL-3-METHYL BENZAMI	20.13	3	JN
2.		UNKNOWN	26.03	2	J
3.		UNKNOWN	29.23	3	J
4.	791-28-6	TRIPHENYL PHOSPHINE OXIDE	32.30	10	BJN
5.		UNKNOWN	35.02	8	BJ

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
DS-SW03

FY438

Lab Name: ENCOTEC Contract: 68-D2-0012

Lab Code: ENCOT Case No.: 23985 SAS No.: SDG No.: FY341

Matrix: (soil/water) WATER Lab Sample ID: 18455

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

% Moisture: decanted: (Y/N) Date Received: 10/30/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 11/02/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/12/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

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

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	gamma-BHC (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
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
DS-SW03

MFZ738

Lab Name: WADSWORTH_ALERT_LABS_____ Contract: 68D20049__

Lab Code: WADSPA Case No.: 18985_ SAS No.: _____ SDG No.: MFZ641

Matrix (soil/water): WATER Lab Sample ID: MFZ738____

Level (low/med): LOW__ Date Received: 10/30/92

% 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_	885			P
7440-36-0	Antimony_	31.0	U		P
7440-38-2	Arsenic__	3.0	U		F
7440-39-3	Barium___	68.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	3.0	U		P
7440-70-2	Calcium__	16400			P
7440-47-3	Chromium_	8.0	U		P
7440-48-4	Cobalt___	7.0	U		P
7440-50-8	Copper___	7.2	B		P
7439-89-6	Iron_____	1870			P
7439-92-1	Lead_____	10.2		W	F
7439-95-4	Magnesium	5030			P
7439-96-5	Manganese	1590			P
7439-97-6	Mercury__	4.7			CV
7440-02-0	Nickel___	7.0	U		P
7440-09-7	Potassium	4110	B		P
7782-49-2	Selenium_	1.2	B	WN	F
7440-22-4	Silver___	5.0	U		P
7440-23-5	Sodium___	38500			P
7440-28-0	Thallium_	4.0	U		F
7440-62-2	Vanadium_	6.0	U		P
7440-66-6	Zinc_____	24.0			P
_____	Cyanide__				NR

Color Before: COLORLESS Clarity Before: OPAQUE Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

QC SAMPLES

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AI839

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. ____ Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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	3	BJ
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-02-6	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-01-5	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AI839

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: not dec. ____ Date Analyzed: 10/21/92

GC Column: SP-1000 ID: 2.00 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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.

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BG866

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: decanted: (Y/N) Date Extracted: 10/22/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL). Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BG866

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: decanted: (Y/N) Date Extracted: 10/22/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Lab Code: RECMD Case No.: 18931 SAS No.: _____ SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BG866

Level: (low/med) LOW Date Received: 10/21/92

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 10/22/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/23/92

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.40	6	J
2. 143282	9-Octadecen-1-ol, (Z)-	22.60	85	BJN

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY405

Lab Name: RECRA ENVIRON Contract: 68D20035

Code: RECMD Case No.: 18931 SAS No.: SDG No.: FY405

Matrix: (soil/water) WATER Lab Sample ID: BS004732

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

% Moisture: decanted: (Y/N) Date Received: 10/21/92

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 10/22/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 10/26/92

Injection Volume: 4.00 (uL) Dilution Factor: 1.00

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

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	gamma-BHC (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
7421-93-4	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

172

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

MFZ705

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

Matrix (soil/water): WATER Lab Sample ID: 5333S

Level (low/med): LOW Date Received: 10/23/92

% 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	100	U		P
7440-36-0	Antimony	40.0	U		P
7440-38-2	Arsenic	19.6		S	F
7440-39-3	Barium	11.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	4.0	U		P
7440-70-2	Calcium	310	U		P
7440-47-3	Chromium	9.0	U		P
7440-48-4	Cobalt	7.0	U		P
7440-50-8	Copper	20.0	U		P
7439-89-6	Iron	29.6	B		P
7439-92-1	Lead	3.2			F
7439-95-4	Magnesium	185	U		P
7439-96-5	Manganese	4.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	16.0	U		P
7440-09-7	Potassium	900	U		A
7782-49-2	Selenium	10.0	U	W	F
7440-22-4	Silver	7.0	U		P
7440-23-5	Sodium	330	U		P
7440-28-0	Thallium	3.0	U	W	F
7440-62-2	Vanadium	16.0	U		P
7440-66-6	Zinc	24.9			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY443

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY443V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FY443V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/06/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FY443

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY443V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FY443V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/06/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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.

FY443

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY443BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY443BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY443

b Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY443BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY443BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	0.5	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	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	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-Butylphthalate	1	J
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	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octylphthalate	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

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY443

b Name: ENCOTEC Contract: 68-D2-0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY443BR

Sample wt/vol: 1000 (g/mL) ML Lab File ID: FY443BR

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: decanted: (Y/N) Date Extracted: 10/29/92

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/04/92

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	150-76-5	4-METHOXY PHENOL	10.20	5	JN
2.	00-00-0	UNKNOWN	25.12	5	J
3.	80-07-9	1,1'-SULFONYLBIS[4-CHLORO-BE	29.25	5	JN
4.	791-28-6	TRIPHENYL PHOSPHINE OXIDE	32.23	7	JN

PESTICIDE ORGANICS ANALY

EPA SAMPLE NO.

FY443

Lab Name: ENCOTEC Contract: 68-D2 0033

Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: 18371

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

% Moisture: decanted: (Y/N) Date Received: 10/29/92

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 10/30/92

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/04/92

Injection Volume: 3.00 (uL) Dilution Factor: 1.00

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

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	gamma-BHC (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
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MFZ743

Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980_ SAS No.: _____ SDG No.: MFZ722

Matrix (soil/water): WATER Lab Sample ID: MFZ743____

Level (low/med): LOW__ 00017 Date Received: 10/30/92

% 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_	37.2	U		P
7440-36-0	Antimony_	22.5	U		P
7440-38-2	Arsenic__	1.8	U		F
7440-39-3	Barium___	2.7	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium__	2.2	U		P
7440-70-2	Calcium__	221	B		P
7440-47-3	Chromium_	2.9	U		P
7440-48-4	Cobalt___	8.3	U		P
7440-50-8	Copper___	6.4	U		P
7439-89-6	Iron_____	42.7	U		P
7439-92-1	Lead_____	1.1	U		F
7439-95-4	Magnesium	64.2	B		P
7439-96-5	Manganese	1.1	B		P
7439-97-6	Mercury__	2.2			CV
7440-02-0	Nickel___	10.6	U		P
7440-09-7	Potassium	517	B		P
7782-49-2	Selenium_	0.90	U		F
7440-22-4	Silver___	2.7	U		P
7440-23-5	Sodium___	387	B		P
7440-28-0	Thallium_	1.3	U		F
7440-62-2	Vanadium_	4.8	B		P
7440-66-6	Zinc_____	7.8	B		P
_____	Cyanide__				NR

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: _____

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FY444

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY444V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FY444V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/06/92

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FY444

Lab Name: ENCOTEC Contract: 68-D2-0033

Lab Code: ENCOT Case No.: 18980 SAS No.: SDG No.: FY422

Matrix: (soil/water) WATER Lab Sample ID: FY444V

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: FY444V

Level: (low/med) LOW Date Received: 10/29/92

% Moisture: not dec. Date Analyzed: 11/06/92

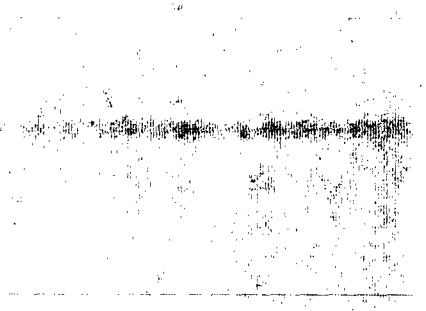
GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

CLP VALIDATION



pH values all 7.0

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Ref. Case No. 18930

Site Name Devil's Swamp Lake

Date: 11-20-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI M. Ritter

To : J. Jones ,6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:

ORGANIC: FY-301 TO FY-308

The data was found:

( ) Acceptable

(X) **Provisional**; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-20-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, 6E-HO, Region 6

To: Dr. Melvin Ritter , Chemist , Region 6

Attached is the data review summary for Case # 18930
SDG # FY-301
Site Devil's Swamp Lake

Data was found: ( ) Acceptable

(X) Provisional

( ) Unacceptable

Action required by TPO: (X) Yes

( ) No

COMMENTS:

1- Analysis for four VOA samples did not meet holding time criteria.

2- Rinsate blanks contaminated with VOA TCL compounds >CRQLs.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18930
LABORATORY COMPU
CONTRACT# 68-D2-0034
SDG# FY301
SOW# RAS IFB OLM01.8
ACCT# 3TFAJN30 SF# TFAU4E

SITE Devil's Swamp Lake
NO. OF SAMPLES 8
MATRIX Water
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Tseng-Ying Fan
COMPLETION DATE November 20, 1992

SAMPLE NO.					
	FY-301	FY-305			
	FY-302	FY-306			
	FY-303	FY-307			
	FY-304	FY-308			

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	M	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O	N/A
3. CALIBRATIONS	O	O	O	N/A
4. BLANKS	X	O	O	N/A
5. SURROGATES/SMC	O	O	O	N/A
6. MATRIX SPIKE/DUPLICATE	O	X	O	N/A
7. OTHER QC	N/A	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	O	O	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	X	O	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: The analyses for 4 VOA samples exceeded technical holding time limits.

AREA OF CONCERN: The rinsate blanks were contaminated with VOA TCL compounds >CRQLs.

NOTABLE PERFORMANCE: The data package arrived 2 days early

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 18930 SDG: FY301 **SITE** Devil's Swamp Lake **LAB** COMPU

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	4	4	
BNA	7		
PEST	7		
OTHER	N/A		

COMMENTS: The case consisted of 8 water samples for complete RAS organics analysis. Sample FY-306 required VOA analysis only. The data package arrived 2 days early for the 14 day turnaround. According to the OTR/COC records, samples FY-306 and FY-308 were rinsate blanks and sample FY-304 was the designated QC sample. Four VOA samples failed technical holding time criteria. No TCL compounds were reported >CRQLs in the samples except some VOA TCL compounds in the rinsate blanks. Data are provisional for 4 VOA samples due to holding time deficiencies.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF) and the Evidence Inventory Checklist is attached to this report.

1. **Holding Times** - Provisional. All samples met contractual holding time criteria. VOA aromatic results are estimated for samples FY-301, FY-302, FY-303, and FY-306 because the samples were analyzed 1 day past the technical holding time limits (40 CFR 136). Other samples met technical holding time criteria.

2. **Tuning/Performance** - Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Internal standard performance met QC guidelines for all samples. Pest/PCB analyses met instrument performance criteria.

3. **Calibrations** - Acceptable. Target compounds generally met contractual calibration criteria for all fractions.

4. **Blanks** - Acceptable. Method and instrument blanks met contractual criteria for all fractions. Methylene chloride and bis(2-ethylhexyl)phthalate were reported <CRQL in some VOA and BNA method blanks. The "B" flagged sample results for these blank contaminants are estimated due to possible laboratory contamination. The rinsate blanks, samples FY-306 and FY-308, were contaminated with acetone or methylene chloride >CRQL. However, these compounds were not detected >CRQLs in other samples.

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 18930 SDG: FY301 **SITE** Devil's Swamp Lake **LAB** COMPU

COMMENT:

5. **System Monitoring Compounds (SMC)/Surrogates** - Acceptable. SMC and surrogate recoveries were generally within QC guidelines for all fractions.

6. **Matrix Spike/Matrix Spike Duplicate** - Acceptable. MS/MSD analyses met QC criteria for precision and accuracy for VOA and Pest/PCB fractions. MS and/or MSD recoveries exceeded QC limits for 4-chloro-3-methylphenol, 4-nitrophenol, and pentachlorophenol for the BNA fraction. Since these compounds were not detected in the unspiked sample, sample data were unaffected. Other BNA compounds met QC requirements for the MS/MSD analysis.

7a. **Compound Identity/Quantitation/** - Acceptable. No TCL compounds were reported >CRQLs in the samples, except methylene chloride and acetone in VOA samples FY-308 and FY-306, respectively. Sample spectra met compound identification criteria.

7b. **Data Completeness** - Acceptable. The data package was complete with minor deficiencies. The laboratory was contacted for correction (see attached FAX Record Log).

8. **Case Assessment** - Data are provisional for VOA samples FY-301, FY-302, FY-303, and FY-306 due to holding time deficiencies. Four VOA samples and all BNA and Pest/PCB samples are acceptable.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18930 SDG No. FY301 SDG Nos. To Follow SAS No. Date Rec 11/[illegible]

EPA Lab ID: COMPU
Lab Location: 3308 Chapel Hill/Nelson Hwy, RTP, NC
Region: 6 Audit No.: 18930/FY301
Re_Submitted CSF? Yes _____ No X
Box No(s): 1
COMMENTS:

Item	Comment
20	The SDG Cover Sheet was not the original copy.
	* The laboratory was contacted for the deficiency.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen Nguyen Kathleen Nguyen/Scientist Associate Date 11/12/92
Audited by: _____ _____ Date _____
Audited by: _____ _____ Date _____
Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
Entered by: _____ _____
Reviewed by: _____ _____
Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713) 983-2134

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Cynthia Edwards

Firm COMPU

City 3308 Chapel Hill **State** NC 27709

Telephone 919-248-6757 **Ext.** _____

Fax Telephone No. 919-248-6791 **Ext.** _____

Sender:

Name Tseng-Ying Fan

Date November 20, 1992 **Time** _____

Total Number of pages including this Cover Sheet _____

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2134

MESSAGES: Resubmission request for Case 18930 SDG: FY301

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
18930 SDG: FY301

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 20, 1992
Laboratory Name: COMPU
Lab Contact: Cynthia Edwards

Region: 6
Regional Contact: Tseng-Ying Fan - ESAT

FAX initiated by: _____Laboratory ___X___Region

In reference to data for the following fractions:

CSF deliverable PEST

Summary of Questions/Issues:

A. CSF deliverable
1. The submitted SDG Cover Sheet was not the original copy. Please submit the original or indicate its location.

B. Pest/PCB
1. Forms 6D and 6E (p. 656 - p. 659): The reported initial calibration date should be 10/21/92 - 10/22/92. Please correct and resubmit.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM01.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 14 days** to:

Ms. Christy Macdowell - ESAT
c/o U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2134.

Signature November 20, 1992
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE: 12/22/92 CASE #: 18930

SAS # :

TO: J. Jones (6H-MA) SDG # : FY301

LAB : COMPU

FROM: Tseng-Ying Fan - ESAT SITE NAME: Devil's Swamp
Region 6 Lake

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response to Region 6 request.

A. CSF Deliverable

1. The original copy of the SDG Cover Sheet was submitted to SMO.

B. Pest/PCB

1. The reviewer verified that the original Forms 6D and 6E were correct.

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18930

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	Fed X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 526126386

Non-Superfund Program

Sampler Signature: Jeff Ayers

5. Ship To: Compuchem Labs
3308 Chapel Hill/Nelson Hwy
Research Triangle Park, NC
27709
ATTN: Terry Evans (919) 549-8263

Site Name: Devil's Swamp Lake

City, State: Scotlandville, La

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO_3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only: ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY301	1	L	G	N	X				6-014111	DSL-SW01	10/19/92 1220	MEB	MFZ601	—
FY301	1	L	G	N	X				6-014112	DSL-SW01	10/19/92 1220	MEB		—
FY301	1	L	G	N		X			6-014113	DSL-SW01		MEB		—
FY301	1	L	G	N			X		6-014114	DSL-SW01		MEB		—
FY303	1	L	G	N	X				6-014121	DSL-SW03	10/19/92 1330	MEB	MFZ603	D
FY303	1	L	G	N	X				6-014122	DSL-SW03	10/19/92 1330	MEB	MFZ603	D
FY307	1	L	G	N	X	/			6-013873	DS-SW01	10/19/92 1300	JTA	MFZ607	—
FY307	1	L	G	N	X				6-013874					—
FY307	1	L	G	N		X			6-013871					—
FY307	1	L	G	N			X		6-013872					—

Shipment for Case complete? (Y/N): N

Page 1 of 1

Sample used for a spike and/or duplicate: [redacted]

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Ayers	10/20/92 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
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O nic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18930

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	FEDERAL EXPRESS

Regional Information:

Non-Superfund Program:

Site Name: DEVIL'S SWAMP LAKE

City, State: SCOTLANDVILLE, LA

Site Spill ID:

Sampler (Name): JEFFREY T. AYERS

Sampler Signature: Jeffrey T Ayers

3. Type of Activity: Lead / Pre-Remedial / Remedial / Removal

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

Airbill Number: 5266126390

5. Ship To: COMPUCHEM LABORATORIES
3308 CHAPEL HILL/NELSON HWY
RESEARCH TRIANGLE PARK, NC 27709
(919) 549-8263
ATTN: TERRY EVANS

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY303	1	L	G	N		X			6-014123	DSL-SW-03	10/19/92/1330	MEB	MFZ603	D
FY303	1	L	G	N			X		6-014124	DSL-SW-03	10/19/92/1330	MEB	MFZ603	D
FY302	1	L	G	N	X				6-014116	DSL-SW-02	10/19/92/1317	MEB	MFZ602	—
FY302	1	L	G	N	X				6-014117	DSL-SW-02	10/19/92/1317	MEB	MFZ602	—
FY302	1	L	G	N		X			6-014118	DSL-SW-02	10/19/92/1317	MEB	MFZ602	—
FY302	1	L	G	N			X		6-014119	DSL-SW-02	10/19/92/1317	MEB	MFZ602	—
FY305	1	L	G	N	X				6-014143	DS-SW-02	10/19/92/1535	MEB	MFZ605	—
FY305	1	L	G	N	X				6-014144	DS-SW-02	10/19/92/1535	MEB	MFZ605	—
FY305	1	L	G	N		X			6-014145	DS-SW-02	10/19/92/1535	MEB	MFZ605	—
FY305	1	L	G	N			X		6-014146	DS-SW-02	10/19/92/1535	MEB	MFZ605	—

Shipment for Case complete? (Y/N): Y

Page 1 of ___

Sample used for a ~~spike and/or~~ duplicate: FY303

Additional Sampler Signatures: M. Butler M. Juseins

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeffrey T Ayers	102092 / 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

O nic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18430

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	FEDERAL EXPRESS

Regional Information

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 526126401

Non-Superfund Program

Sampler Signature:

5. Ship To: COMPUCHEM LABORATORIES 3308 CHAPEL HILL/NELSON HWY RESEARCH TRIANGLE PARK, NC 27709 (919)549-8263 ATTN: TERRY EVANS

Site Name: DEVIL'S SWAMP LAKE

City, State: SCOTLANDVILLE, LA

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis VOA	E BNA	E Pest/ PCB	E High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY304	1	L	G	N	X				6-014129	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N	X				6-014130	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N	X				6-014131	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N	X				6-014132	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N	X				6-014135	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N	X				6-014136	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N		X			6-014126	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N		X			6-014137	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N			X		6-014127	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S
FY304	1	L	G	N			X		6-014128	DSL-SW-04	10/19/92/1427	MEB	MFZ604	S

Shipment for Case complete? (Y/N): N

Page 1 of ___

Sample used for ~~a spike and/or duplicate~~: FY304

Additional Sampler Signatures: M. Butler M. Jenkins

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	102092 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)

☐ Declined

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O 310635

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

O. nic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 18930

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	FEDERAL EXPRESS

Regional Information

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 5266126375

Non-Superfund Program

Sampler Signature: Jeffrey T. Ayers

Site Name: DEVIL'S SWAMP LAKE

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI ☒; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

5. Ship To: COMPUCHEM LABORATORIES
3308 CHAPEL HILL/NELSON HWY
RESEARCH TRIANGLE PARK, NC 27709
(919) 549-8263
ATTN: TERRY EVANS

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY308	4	L	G	N	X				6-014138	DSLER-01	10/19/92/1048	MJ	MFZ608	B
FY308	4	L	G	N	X				6-014139	DSLER-01	10/19/92/1048	MJ	MFZ608	B
FY308	4	L	G	N		X			6-014140	DSLER-01	10/19/92/1048	MJ	MFZ608	B
FY308	4	L	G	N			X		6-014141	DSLER-01	10/19/92/1048	MJ	MFZ608	B
FY306	4	L	G	N	X				6-014101	DSL-TB-01	10/19/92/0911	MEB	—	B
FY306	4	L	G	N	X				6-014102	DSL-TB-01	10/19/92/0911	MEB	—	B
~~FY306~~														

Shipment for Case complete? (Y/N): N

Page 1 of ___

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: M. Dutton M. Juscius

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeffrey T. Ayers	102092 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to Region Yellow - Lab Copy for Return to SMO

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

0340636

COMPUCHEM LABORATORIES, INC. P O. Box 12652 3308 Chapel Hill/Nelson Highway Research Triangle Park. NC 27709 (919) 549-8263

30/OCT/92

USEPA Region VI, Laboratory
10626 Fallstone Road
Houston, TX 77099

Attention: Ms. Meg Jou

Re: EPA contract #

Subject: REPORT OF DATA - Case# 18930 SDG# FY301

Dear Ms. Jou

Enclosed are the results of analytical data performed in accordance with the referenced contract.

This report covers 8 sample(s) and results associated with analysis of the duplicate matrix spike results, received by CompuChem Laboratories identified as Case Number 18930 .

If you have any questions regarding this data package, please contact me at 1-919-549-8263.

Sincerely,

Melissa Watson

for Elise L. Cobb
Supervisor, Report Deliverables

Attachment

cc: Sample Management Office
EMSL

COMPUCHEM LABORATORIES, INC.

30/OCT/92

Ms. Meg Jou
USEPA Region VI, Laboratory
10626 Fallstone Road
Houston, TX 77099

REPORT OF DATA FOR - EPA CASE# 18930 SDG# FY301

CC#	SMO OTR #	MATRIX	RECEIPT DATE
518239	FY301	WA	10/21/92
518249	FY302	WA	10/21/92
518250	FY303	WA	10/21/92
518251	FY304	WA	10/21/92
518252	FY305	WA	10/21/92
518254	FY306	WA	10/21/92
518255	FY307	WA	10/21/92
518256	FY308	WA	10/21/92

TOTAL NUMBER OF SAMPLES = 8

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME CompuChem Laboratories
CITY/STATE Research Triangle Park, NC

CASE NO. 18930 SDG NO. FY301 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

CONTRACT NO. 68D20034
SOW NO. _____

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs FROM	TO	CHECK LAB	EPA
1. Inventory Sheet (Form DC-2) (Do not number)	_____	_____	✓	✓
2. SDG Case Narrative	001	012	✓	_____
3. SDG Cover Sheet/Traffic Report	013	018	✓	_____
4. Volatiles Data				
a. QC Summary				
System Monitoring Compound Summary (Form II VOA)	019	022	✓	_____
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	023	024	✓	_____
Method Blank Summary (Form IV VOA)	025	026R SWW 10-30-92	✓	_____
GC/MS Instrument Performance Check (Form V VOA)	029	034	✓	✓
Internal Standard Area and RT Summary (Form VIII VOA)	035	038	✓	✓
b. Sample Data	039	111	✓	✓
TCL Results - (Form I VOA)			✓	_____
Tentatively Identified Compounds (Form I VOA-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			✓	✓
Quantitation reports			✓	_____
Mass spectra of all reported TICs with three best library matches			✓	_____
c. Standards Data (All Instruments)	112	183		✓
Initial Calibration Data (Form VI VOA)			✓	_____
RICs and Quan Reports for all Standards			✓	_____
Continuing Calibration Data (Form VII VOA)			✓	_____
RICs and Quantitation Reports for all Standards			✓	_____
d. Raw QC Data				
BFB	184	200	✓	_____
Blank Data	201	223	✓	_____
Matrix Spike/Matrix Spike Duplicate Data	224	237	✓	_____

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18930 SDG NO. FY301 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
5. Semivolatiles Data				
a. QC Summary				
Surrogate Percent Recovery Summary (Form II SV)	235	241	✓	✓
MS/MSD Summary (Form III SV)	242	243	✓	✓
Method Blank Summary (Form IV SV)	244	246	✓	✓
GC/MS Instrument Performance Check (Form V SV)	247	252	✓	✓
Internal Standard Area and RT Summary (Form VIII SV)	253	259	✓	✓
b. Sample Data	260	390	✓	
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds			✓	✓
Quantitation reports			✓	✓
Mass spectra of TICs with three best library matches			✓	✓
GPC chromatograms (if GPC performed)			✓	✓
c. Standards Data (All Instruments)	391	500	✓	
Initial Calibration Data (Form VI SV-1, SV-2)			✓	✓
RICs and Quan Reports for all Standards			✓	✓
Continuing Calibration Data (Form VII SV-1, SV-2)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
Semivolatile GPC Calibration Data-UV detector traces			✓	✓
d. Raw QC Data				
DFTPP	501	517	✓	✓
Blank Data	518	546	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	547	572	✓	✓
6. Pesticides				
a. QC Summary				
Surrogate Percent Recovery Summary (Form II PEST)	573	575	✓	✓
MS/MSD Duplicate Summary (Form III PEST)	576	577	✓	✓
Method Blank Summary (Form IV PEST)	578	579	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18930 SDG NO. FY301 SDG NOS. TO FOLLOW _____
_____ 1 SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
7. Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	10000		✓	✓
Internal sample and sample extract transfer chain-of-custody records			✓	✓
Screening records			✓	
All instrument output, including strip charts from screening activities (describe or list)			✓	
		10948	✓	✓
8. EPA Shipping/Receiving Documents				
Airbills (No. of shipments ___)	10950	10956	✓	✓
Chain-of-Custody Records	10957	10960	✓	✓
Sample Tags	10961	10995	✓	✓
Sample Log-In Sheet (Lab & DC1)	10996	10996	✓	✓
Miscellaneous Shipping/Receiving Records (describe or list)				
	10997	11001	✓	✓
9. Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
	10949	10952	✓	✓
10. Other Records (describe or list)				
Telephone Communication Log	11002	11002	✓	✓

11. Comments: Items 1-6 completed by SWWinfield 10-30-92

7-10 completed by Michael Taylor

Completed by: (CLP Lab) Stephanie W Winfield (Signature) Stephanie W Winfield/Technical Reviewer (Printed Name/Title) 10-30-92 (Date)

Michael Taylor / Report Del 10/30/92

Audited by: (EPA) [illegible] (Signature) KATHLEEN T. [illegible]/SCIENTIST ASSOCIATE (Printed Name/Title) 11/12/92 (Date)

FORM DC-2-4

OLM01.7

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18930 SDG NO. EY301 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
7. Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	10000	___	✓	✓
Internal sample and sample extract transfer chain-of-custody records	___	___	✓	✓
Screening records	___	___	✓	✓
All instrument output, including strip charts from screening activities (describe or list)			✓	
_____	___	10947	✓	✓
_____				
8. EPA Shipping/Receiving Documents				
Airbills (No. of shipments ___)	10950	10956	✓	✓
Chain-of-Custody Records	10957	10960	✓	✓
Sample Tags	10961	10965	✓	✓
Sample Log-In Sheet (Lab & DC1)	10966	10976	✓	✓
Miscellaneous Shipping/Receiving Records (describe or list)				
_____	10977	11001	✓	✓
_____	___	___	___	___
9. Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
_____	10949	10952	✓	✓
_____	___	___	___	___
10. Other Records (describe or list)				
Telephone Communication Log	11002	11002	✓	✓
_____	___	___	___	___
_____	___	___	___	___

11. Comments: Items 1-6 completed by S.W. Winfield 10-30-92

_____

7-10 completed by Michael Taylor

Completed by: (CLP Lab) Stephanie W. Winfield (Signature) Stephanie W. Winfield / Technical Reviewer (Printed Name/Title) 10-30-92 (Date)

Reviewed by: (EPA) _____ (Signature) KATHLEEN T. NGUYEN / SCIENTIST ASSOCIATE (Printed Name/Title) 11/12/92 (Date)

FORM DC-2-4

COMPUCHEM LABORATORIES, INC. P.O. Box 12652 3308 Chapel Hill/Nelson Highway Research Triangle Park, NC 27709 (919) 549-8263

SDG Narrative #FY301
Case #18930
Contract #68D20034
CompuChem Laboratories, Inc.

SAMPLE IDENTIFICATIONS: FY301, FY302, FY303, FY304, FY305, FY306, FY307, FY308

These water samples were received October 21, 1992 in good condition, with the proper Traffic Reports (TR), sealed in a cooler. Analyses were scheduled in accordance with the TR. Volatile, semivolatile, and pesticide analyses were performed as requested on these samples. Holding time requirements were met for all of these samples.

All pertinent Quality Assurance and Laboratory notices for Case #18930, SDG #FY301 are included in the sample data package.

VOLATILES

There were volatile Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in two of these samples. No Tentatively Identified Compounds (TICs) were found in any of these samples.

The common laboratory contaminant methylene chloride was identified above the CRQL in FY308. This contaminant was not found in the associated method blank. The TCL analyte acetone was identified above the CRQL in FY306.

The pH values for these samples are tabulated on the attached batch sheets.

The associated method blanks met all quality control criteria. FY304 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met all quality control criteria.

SEMIVOLATILES

There were no semivolatile TCL analytes identified above the CRQL in any of these samples. TICs were found in all of these samples.

The TIC found in FY307 was assessed as a laboratory artifact and therefore may not be a sample constituent. The TICs found in the remaining samples could be characterized as hydrocarbons, (butoxyethoxy)ethanol acetate, and unknowns.

The associated method blanks met all quality control criteria. FY304 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate

matrix spikes met all precision criteria. The recovery of the spike compounds 4-chloro-3-methylphenol and 4-nitrophenol were flagged as an outliers in both the matrix spike and the matrix spike duplicate. The recovery of the spike compound pentachlorophenol was also flagged as an outlier in the matrix spike duplicate. Though three of the six advisory acid spike compounds were flagged as outliers in the matrix spike duplicate, we have reported the data without reanalysis in accordance with the Statement of Work (SOW).

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 the 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.

Stephanie W. Winfield 10-30-92
Stephanie W. Winfield 10/30/92
Technical Reviewer

COMPUCHEM LABORATORIES, INC. P.O. Box 12652 3308 Chapel Hill/Nelson Highway Research Triangle Park, NC 27709 (919) 549-8263

SDG NARRATIVE SDG #FY301
CASE #18930 CONTRACT #68D00204
COMPUCHEM LABORATORIES, INC.

SAMPLES: FY301 FY302 FY303 FY304 FY305 FY307 FY308

The samples listed above were received intact on 10-21-92. For the remaining receiving information please see the narrative summarizing the volatile fractions. The samples were entered into the laboratory management system (LMS) and scheduled for the analyses requested on the chain of custody documents. The appropriate Quality Assurance Notices are enclosed in the sample date package. This narrative summarizes the analysis of these seven water samples for pesticides/PCBs.

Pesticides/PCBs:
All sample and QC fractions were extracted within holding times. No samples contained TCLs above CRQL. All sample and QC fractions met the surrogate recovery criteria. The matrix spike duplicates met all accuracy and precision criteria.

NOTE: THIS DATA PACKAGE WAS PAGINATED FOR REFERENCE AND ACCOUNTABILITY.

NOTE: 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 HIS DESIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURE.

E R Nowell

ELISABETH ROBINS NOWELL
TECHNICAL REVIEWER
10-27-92

COMPUCHEM LABORATORIES, INC. P.O. Box 12652 3308 Chapel Hill/Nelson Highway Research Triangle Park, NC 27709 (919) 549-8263

SDG NARRATIVE SDG #FY301
CASE #18930 CONTRACT #68D00204
COMPUCHEM LABORATORIES, INC.

SAMPLES: FY301 FY302 FY303 FY304 FY305 FY307 FY308

The samples listed above were received intact on 10-21-92. For the remaining receiving information please see the narrative summarizing the volatile fractions. The samples were entered into the laboratory management system (LMS) and scheduled for the analyses requested on the chain of custody documents. The appropriate Quality Assurance Notices are enclosed in the sample date package. This narrative summarizes the analysis of these seven water samples for pesticides/PCBs.

Pesticides/PCBs:
All sample and QC fractions were extracted within holding times. No samples contained TCLs above CRQL. All sample and QC fractions met the surrogate recovery criteria. The matrix spike duplicates met all accuracy and precision criteria.

NOTE: THIS DATA PACKAGE WAS PAGINATED FOR REFERENCE AND ACCOUNTABILITY.

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E R Nowell

ELISABETH ROBINS NOWELL
TECHNICAL REVIEWER
10-27-92

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devil's Swamp Lake

Case# 18985

SDG# FY-341

Date: 12-31-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI M. L. Ritter

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section.
Samples were:

INORGANIC:				
ORGANIC:	FY-341	FY-441		
	FY-361	FY-442		
	FY-362			
	FY-437			
	FY-438			

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-31-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator , Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devil's Swamp Lake
Case # 18985
SDG # FY-341

Data was found: ( ) Acceptable

(X) Provisional

( ) Unacceptable

Action required by TPO: (X) Yes

( ) No

COMMENTS:

1- Analysis of VOA samples exceeded technical holding time limits.

2- Failure to perform VOA MS/MSD analysis on EPA designated QC sample.

3- Three VOA compounds exceeded technical %RSD calibration criteria.

4- Acetone results were inconsistent for duplicate samples.

5- Bis(2-ethylhexyl)phthalate exceeded technical %D calibration criteria.

6- 4-nitrophenol MS/MSD recoveries exceeded QC limits.

7- TCX recovery for sample FY-437 was below advisory QC limit.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18985
LABORATORY ENCOT
CONTRACT# 68-D2-0012
SDG# FY341
SOW# RAS SOW OLM01.8
ACCT# 3TFAJN49 SF# TFAU4E

SITE Devil's Swamp Lake
NO. OF SAMPLES 7
MATRIX Water
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Feng-Chao Kuo
COMPLETION DATE December 31, 1992

SAMPLE NO.					
FY-341	FY-438				
FY-361	FY-441				
FY-362	FY-442				
FY-437					

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	M	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O	N/A
3. CALIBRATIONS	M	M	O	N/A
4. METHOD/TRIP BLANKS	O	O	O	N/A
5. SURROGATES/SMC	O	O	M	N/A
6. MATRIX SPIKE/DUP	O	X	O	N/A
7. DUPLICATES	M	O	O	N/A
8. INTERNAL STANDARDS	O	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	O	O	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	M	M	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: The analyses for 4 VOA and the MS/MSD samples exceeded the technical holding time limits. Three VOA compounds exceeded technical calibration criteria. The duplicate sample results for acetone were inconsistent. Bis(2-ethylhexyl)-phthalate failed technical %D calibration criteria. The TCX recovery for Pest/PCB sample FY-437 was zero on one column and was marginally below the advisory QC limit on the other column.

AREAS OF CONCERN: The data package arrived 12 days late for the 14 day turnaround time. MS/MSD recoveries exceeded the QC limits for 1 BNA compound.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 18985 SDG: FY341 **SITE** Devil's Swamp Lake **LAB** ENCOT

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	1	6	
BNA	3	3	
PEST	5	1	
OTHER	N/A	N/A	

COMMENTS: The case consisted of 7 water samples. The rinsate, sample FY-442, was for VOA analysis only. The other samples were for complete RAS CLP organics analysis. The data package arrived 12 days late for the 14 day contractual turnaround time. According to the OTR/COC Records, sample FY-362 was a duplicate for sample FY-361 and sample FY-441 was also a rinsate blank. Sample FY-361 was the designated QA/QC sample on the OTR/COC Records, but the laboratory performed VOA MS/MSD analyses on sample FY-441 instead. Duplicate VOA samples FY-361 and FY-362, and BNA sample FY-437 were analyzed at dilutions due to high levels of 1,2-dichloroethane and hexachlorobutadiene, respectively. Chlorinated compounds and/or acetone were detected >CRQLs in VOA samples FY-361 and FY-362. Hexachlorobutadiene was detected at a high level in sample FY-437. No TCL compounds were detected in the Pest/PCB samples. Data are provisional for 6 VOA, 3 BNA, and 1 Pest/PCB samples due to problems with holding time, calibration, inconsistent duplicate results, and surrogate recovery.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF) and the Evidence Inventory Checklist is attached to this report. The CCS resubmission is enclosed and should be used.

1. **Holding Times** - Provisional. All samples met contractrual holding time criteria. VOA aromatic results are estimated in samples FY-341, FY-437, FY-441MS, FY-441MSD, FY-441, and FY-442 because these samples were analyzed past the technical holding time limits (40 CFR 136) by 1-2 days. Other samples met technical holding time requirements.

2. **Tuning/Performance** - Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Internal standard area and retention time performance met QC guidelines for the VOA and BNA fractions. Pest/PCB analyses generally met instrument performance guidelines.

ORGANIC QA CHECKLIST

CONTINUATION PAGE

CASE NO. 18985 SDG: FY341 **SITE** Devil's Swamp Lake LAB. ENCOT

COMMENTS:

3. **Calibrations** - Provisional. All compounds generally met contractual calibration criteria for all fractions. Results are estimated for methylene chloride, 1,1-dichloroethene and 1,2-dichloroethene in VOA samples FY-361 and FY-362 because these compounds exceeded the technical %RSD calibration criteria. Bis(2-ethylhexyl)phthalate results are also estimated in method blank, SBLK2, and samples FY-361, FY-362, FY-361MS, FY-361MSD, and FY-438 because this compound exceeded the technical %D calibration criteria.

4. **Blanks** - Acceptable. The method and instrument blanks met contractual criteria. The common laboratory contaminants, bis(2-ethylhexyl)phthalate and di-n-butylphthalate, were detected <CRQLs in the BNA method blanks. The following sample results for these compounds should be qualified undetected (U) because the concentrations were below 10X the blank levels:

di-n-butylphthalate in samples FY-437DL and FY-441; and

bis(2-ethylhexyl)phthalate in samples FY-361, FY-362, FY-437, FY-438, FY-316MS, and FY-361MSD.

5. **System Monitoring Compounds (SMCs)/Surrogates** - Provisional. All VOA SMC and BNA surrogate recoveries were within QC limits. The detection was obscured by matrix interference on one column and the recovery was marginally below the QC limit on the other column for TCX in Pest/PCB sample FY-437. In the reviewer's opinion, the quantitation limits for BHC's, heptachlor, and AR1221 are estimated due to possible low bias for this Pest/PCB sample. The TCX recovery was marginally below the QC limit on one column for sample FY-441, but met QC criteria on the other column. No action was taken for this sample.

6. **Matrix Spike/Matrix Spike Duplicate** - Acceptable. All MS/MSD recoveries were within the QC limits except BNA compound 4-nitrophenol. Sample results were unaffected because this compound was not detected in the unspiked sample.

7a. **Compound Identity** - Provisional. Vinyl chloride, 1,2-dichloroethene, 1,2-dichloroethane, 1,2-dichloropropane, 1,1,2-trichloroethane and/or acetone were detected >CRQLs in samples FY-361 and FY-362. Hexachlorobutadiene was detected at high concentration in BNA sample FY-437. Spectra and retention time met identification criteria for the VOA and BNA fractions. No TCL compounds were detected in the Pest/PCB samples. The acetone

ORGANIC QA CHECKLIST

CONTINUATION PAGE

CASE NO. 18985 SDG: FY341 **SITE** Devil's Swamp Lake LAB. ENCOT

COMMENTS:

7a. Compound Identity - Provisional. (continued)
results are estimated for duplicate VOA samples FY-361 and FY-362 because this compound was reported >CRQL in sample FY-361 only. Other duplicate sample results were consistent.

7b. Data Completeness - Acceptable. The data package was complete with minor deficiencies and the laboratory was contacted for resubmission (see attached FAX Record Log).

8. Case Assessment - Data are acceptable for 1 VOA, 3 BNA, and 5 Pest/PCB samples.
VOA Samples FY-341, FY-361, FY-362, FY-437, FY-441, and FY-442 are provisional due to problems with holding time, calibration, and inconsistent duplicate results.
BNA Samples FY-361, FY-362, and FY-438 are provisional due to a deficiency in calibration.
Pest/PCB Sample FY-437 is provisional due to a surrogate recovery deficiency.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

. No. 18985 SDG No. FY341 SDG Nos. To Follow SAS No. Date Rec 11/25/92

EPA Lab ID: ENCOT
Lab Location: 3985 R.T.Park,Ann Arbor,MI 48108
Region: 6 Audit No.: 18985/FY341
Re_Submitted CSF? Yes _____ No X
Box No(s): 1
COMMENTS:

Item No. Comments

14, 15 The airbill was not signed or dated.

20, 20a The SDG cover sheet was not an original.

* The laboratory was contacted for these eficiencies.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?		X	
15. Dated?		X	
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?		X	

Audited by: Feng-Chao Kuo Feng-Chao Kuo/Data Reviewer Date 12/29/92
Audited by: _____ _____ Date _____
Audited by: _____ _____ Date _____
Signature Printed Name/Title

TO BE COMPLETED BY CEAT

te Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
Entered by: _____ _____
Reviewed by: _____ _____
Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713)983-2138

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Thomas Marshall

Firm ENCOT

Address 3985 Research Triangle Park Dr.

City Ann Arbor **State** MI 48108

Telephone (313) 761-1389 **Ext.** _____

Fax Telephone No. (313) 761-1034 **Ext.** _____

Sender:

Name Feng-Chao Kuo

Date December 31, 1992 **Time** _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2138.

MESSAGES: Case:18985 SDG:FY341

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
18985 SDG:FY341

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: December 31, 1992
Laboratory Name: ENCOT
Lab Contact: Thomas Marshall
Region: 6
Regional Contact: Feng-Chao Kuo - ESAT

FAX initiated by: _____Laboratory ___X___Region

In reference to data for the following fractions:

CSF Deliverable VOA BNA

Summary of Questions/Issues:

A. CSF Deliverable

1. Airbill No. 2500774323 was not signed or dated. An airbill request letter attached with a airbill signature form was mailed separately to your laboratory.

2. All CSF deliverables must be originals (SOW OLM01.0, B-21, B-21, E.1). If the originals are not available, the location for the originals must be indicated on the submitted copies. The SDG cover sheet was not the original copy. Please submit the original copy or indicate its location.

B. VOA

1. Please explain why the QC sample designated on the OTR/COC records, FY-361, was not used for MS/MSD analyses.

C. BNA

1. The EPA sample No.'s on the following Forms were incorrect and should be FY437DL:

Form	Sample No.	Pages
5B	8	227
8B	1	231
8C	1	235

Please correct and resubmit these forms.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact ENCOT/Thomas Marshall
In Reference To Case No. 18985 **SDG:** FY341

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM01.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 14 days** to:

Ms. Christy Macdowell - ESAT
c/o U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2138

Feng-Chao Kuo
Signature

December 31, 1992
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 189 5

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/28/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 250077A323

Non-Superfund Program

Sampler Signature:

5. Ship To: ENCOTEC
3985 RESEARCH TRIANGLE PK. DR
ANN ARBOR, MI 48108
(313) 761-1389
ATTN: SCOTT DEVORE

Site Name: Devil's Swamp Lake

City, State: Scotlandville, La

Site Spill ID:

3. Type of Activity: Lead / Pre-Remedial / Remedial / Removal

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LS [X]	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D): 1. HCl; 2. HNO3; 3. $NaHSO_4$; 4. H_2SO_4; 5. Other (Specify); 6. Ice only; N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water; 2. Ground Water; 3. Leachate; 4. Rinsate; 5. Soil/Sediment; 6. Oil (High only); 7. Waste (High only); 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
FY341	1	L	G	N	X				6-014248, 49	BBR SW 01	10/27/92 0925	MEB	MFZ 641	—
FY341	1	L	G	N		X	X		6-013880, 81	BBR SW 01	10/27/92 0925	MEB	MFZ 641	—
FY437	1	L	G	N	X				6-014071, 072	DS-SW 02	10/27/92/1610	PDD	MFZ 737	—
FY437	1	L	G	N		X	X		6-014073, 074	DS-SW 02	10/27/92/1610	PDD	MFZ 737	—
FY442	4	L	G	N	X				6-014263, 264	DSL-TB 02	10/28/92/1635	LV	—	B
FY441	4	L	G	N	X				6-014258, 259	DSL-ER 02	10/28/92/1610	LV	MFZ 741	B
FY441	4	L	G	N		X	X		6-014260, 261	DSL-ER 02	10/28/92/1610	LV	MFZ 741	B

Shipment for Case complete? (Y) (N)

Page 1 of 1

Sample used for a spike and/or duplicate

Additional Sampler Signatures:

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/28/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples: [ ] Accepted (Signature) [ ] Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

O3406[illegible]

OLM1

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18585

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/29/92	FED EX

Regional Information

Sampler (Name): LUIS VEGA

Airbill Number: 526612632O

Non-Superfund Program

Sampler Signature: Luis Vega

5. Ship To: ENCOTEC, 3985 RESEARCH TRIANGLE PK. DR, ANN ARBOR, MI 48108, (313) 761-1389, ATTN: SCOTT DEVORE

Site Name: DEVILS SWAMP LAKE

City, State: SCOTLANDVILLE, LA

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial		Remedial	Removal
SF			RIFS	CLEM	
PRP		PA	RD	REMA	
ST		SSI	RA	REM	
FED		LSI	O&M	OIL	
			NPLD	UST	

6. Preservative (Enter in Column D): 1. HCl, 2. HNO3, 3. $NaHSO_4$, 4. H_2SO_4, 5. Other (Specify), 6. Ice only, N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	E: BNA	E: Pest/ PCB	E: High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank, S = Spike, D = Duplicate, PE = Perform. Eval., — = Not a QC Sample)
FY361	1	L	G	N	X				6-014310, 311	BBR-SW02	10/28/92/0941	MJE	MFZ661	—
FY361					X				6-014312, 313					—
FY361					X				6-014314, 315					—
FY361						X			6-014316, 317					—
FY361							X		6-014318, 319					—
FY362					X				6-014322, 323	BBR-SW03	10/28/92/1020		MFZ662	D (FY361)
FY362						X			6-014324					D (FY361)
FY362							X		6-014325					D (FY361)

Shipment for Case complete? (Y/N): YES

Page 1 of 1 1of1

Sample used for a spike and/or duplicate: FY361

Additional Sampler Signatures: Luis Vega for MJE

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)

☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used.

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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

0340651

OLM01.0

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 1895

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/29/92	FED EX

Regional Information

Sampler (Name): LUIS VEGA

Airbill Number: 526612631 6

Non-Superfund Program

Sampler Signature: Luis Vega

Site Name: DEVIL'S SWAMP LAKE

3. Type of Activity: Remedial / Removal

Lead	Pre-Remedial	Remedial		Removal	
SF		RIFS		CLEM	
PRP	PA	RD		REMA	
ST	SSI	RA		REM	
FED	LSI	O&M		OIL	
		NPLD		UST	

5. Ship To: ENCOTEC, 3985 RESEARCH TRIANGLE PARK DR, ANN ARBOR, MI 48108, (313) 761-1389, ATTN: SCOTT DEVORE

City, State: SCOTLANDVILLE, LA

Site Spill ID:

6. Preservative (Enter in Column D): 1. HCl 2. HNO_3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only: ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY438	1	L	G	N	X				6-014076,77	DS-SW03	10/28/92/1020	PDD	MFZ73B	—
FY438	↓	↓	↓	↓		X			6-014078	↓	↓	↓	↓	—
FY438	↓	↓	↓	↓			X		6-014079	↓	↓	↓	↓	—

Shipment for Case complete? (Y/N): YES

Page ~~2~~ 2 of ~~2~~ 1 of 1

Sample used for a spike and/or duplicate

Additional Sampler Signatures: L Vega for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

Org-1

0340658

ENVIRONMENTAL
CONTROL
TECHNOLOGY
CORPORATION

3985 RESEARCH PARK DRIVE
ANN ARBOR, MICHIGAN 48108
313/761-1389

November 24, 1992

Ms. Linda Boynton
U.S. EPA Contract Laboratory Program
Sample Management Office (SMO)
300 N. Lee Street
Suite 200
Alexandria, VA 22314

RE: Case 18985 Diskette and Data Package Deliverable

Dear Linda,

Please find the enclosed data package deliverable for Case 18985. Additional copies of the data package are being sent to EMSL-LV and Region VI.

If you have any questions about this or any other matter, please feel free to contact me.

Very truly yours,

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION

Thomas H. Marshall
CLP Project Manager

THM/clk

Enclosure

cc: EMSL-LV
Region VI

75100

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME ENSOTEC
CITY STATE Ann Arbor, MI
CASE NO. 18985 SDG NO. FY341 SDG NOS. TO FOLLOW N/A
N.A. N.A. SAS NO. N.A.
CONTRACT NO. 68-D2-0212
SOW NO. OLM01.3

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III)

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
1 INVENTORY SHEET (Form DC-2) (Do not number)	N.A.	N.A.	Thu 11/23/92	
2 SDG CASE NARRATIVE	1	6		✓
3 TRAFFIC REPORT	7	9		✓
4 VOLATILES DATA				
a. QC Summary				
System Monitoring Compound Summary (Form II VOA)	10	11		✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	12	N.A.		✓
Method Blank Summary (Form IV VOA)	13	15		✓
GC/MS Instrument Performance Check (Form V VOA)	16	18		✓
Internal Standard Area and RT Summary (Form VIII VOA)	19	21		✓
b. Sample Data	22	122		✓
TCL Results - (Form I VOA)				✓
Tentatively Identified Compounds (Form I VOA-TIC)				✓
Reconstructed total ion chromatograms (RIC) for each sample or sample extract				✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified				✓
Mass spectra of all reported TICs with three best library matches				✓
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI VOA)	123	126		✓
RICs and Quan Reports for all Standards	127	186		✓
Continuing Calibration (Form VII VOA)	N.A	N.A		
RICs and Quan Reports for all Standards	↓	↓		
d. Raw QC Data				
BFB	187	196		✓
Blank Data	197	213		✓
Matrix Spike Data	214	216		✓
Matrix Spike Duplicate Data	217	219		✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO [illegible] SDG NO [illegible] SDG NOS. TO FOLLOW N.A.
N.A. N.A. SAS NO N.A.

	PAGE NOs FORM	TO	CHECK LAB	EPA
5 Semivolatiles Data			THM	
a. QC Summary				
Surrogate Percent Recovery Summary (Form II SV)	220	221	11/23/92	✓
MS/MSD Summary (Form III SV)	222	N.R.		✓
Method Blank Summary (Form IV SV)	223	224		✓
GC/MS Instrument Performance Check (Form V SV)	225	229		✓
Internal Standard Area and RT Summary (Form VIII SV)	230	235		✓
b. Sample Data	236	446		✓
TCL Results (Form I SV-1, SV-2)				✓
Tentatively Identified Compounds (Form I SV-TIC)				
Reconstructed total ion chromatograms (RIC) for each sample, sample extract, standard blank, and spiked sample				
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds				
Mass spectra of TICs with three best library matches				
GPC chromatograms (if GPC performed)				✓
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI SV-1, SV-2)	447	453		✓
RICs and Quan Reports for all Standards	454	543		✓
Continuing Calibration (Form VII SV-1, SV-2)	544	547		✓
RICs and Quan Reports for all Standards	548	571		✓
Semivolatiles GPC Calibration Data-UV detector traces	N.A	N.A.		
d. Raw QC Data				
DFTPP	560	575		✓
Blank Data	576	611		✓
Matrix Spike Data	612	616		✓
Matrix Spike Duplicate Data	617	621		✓
6 Pesticides				
a. QC Summary	6 N.A	N.A		
Surrogate Percent Recovery Summary (Form II PEST)	622	623		
MS/MSD Duplicate Summary (Form III PEST)	624	N.A.		✓
Method Blank Summary (Form IV PEST)	625	N.A.		✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO 13735 SDG NO ESEN1 SDG NOS TO FOLLOW N.A.

N.A. N.A. SASNO N.A.

	PAGE NOs FROM	TO	CHECK LAB	EPA
			Item	
6 Pesticides (cont.)				
b. Sample Data	626	664	11/23/92	✓
TCL Results - Organic Analysis Data Sheet (Form I PEST)				
Chromatograms (Primary Column)				
Chromatograms from second GC column confirmation				
GC integration report or data system printout				
Manual work sheets				
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)				
c. Standards Data				
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)	665	669		✓
Initial Calibration of Multicomponent Analytes (Form VIII. PEST-3)	670	671		✓
Analyte Resolution Summary (Form VI PEST-4)	672	N.A.		✓
Calibration Verification Summary (Form VII PEST-1)	673	676		✓
Calibration Verification Summary (Form VII PEST-2)	677	678		✓
Analytical Sequence (Form VIII PEST)	679	682		✓
Florisil Cartridge Check (Form IX PEST-1)	683	N.A.		
Pesticide GPC Calibration (Form IX PEST-2)	N.A.	N.A.		
Pesticide Identification Summary for Single Component Analytes (Form X PEST-2)	684	685		✓
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)	N.A.	N.A.		
Chromatograms and data system printouts * (C:\pb.mat)	686	~~686~~ 765		✓
A print of retention times and corresponding peak areas or peak heights	N.A.	N.A.		
Pesticide GPC calibration data - UV detector traces	N.A.	N.A.		
d. Raw QC Data				
Blank Data	769	789		✓
Matrix Spike Data	N.A.	797		✓
Matrix Spike Duplicate Data	798	805	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. [illegible] SDG NO. [illegible] SDG NOS. TO FOLLOW N.A.

N.A. N.A. SASNO N.A.

	PAGE NOs FROM	TO	LAB	CHECK EPA
7 Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	843	864		
Internal sample and sample extract transfer chain-of-custody records	[illegible]	N.A.		
Screening records	N.A.	N.A.		
All instrument output, including strip charts from screening activities (describe or list)	N.A.	N.A.		
Autosampler Reports	866	867		
8 EPA Shipping/Receiving Documents				
Airbill (No. of shipments 2)	806	809		
Chain-of-custody Records	816	816		
Sample Tags	817	822		
Sample Log-in Sheet (Lab & DC1)	833	838		
SDG Cover Sheet	839	N.A.		
Miscellaneous Shipping/Receiving Records (describe or list)				
MS/MSD Login	840	842		
	N.A.	N.A.		
9 Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
10 Other Records (describe or list)				
Telephone Communication Log				

11 Comments: N.A. = Not Applicable

Completed by (CLP Lab): [signature] (Signature) Thomas A. Marshall/CLP Proj Mgr (Printed Name/Title) 11/24/92 (Date)

Audited by (EPA): (Signature) (Printed Name/Title) (Date)

NARRATIVE

Case 18985

A total of seven samples were received by ENCOTEC on October 29, 1992 through October 30, 1992, and were scheduled for Organics Analysis under Contract #68-D2-0012, first bid lot. Please refer to the following table for vital information that pertains to this case.

Table 1.0

SDG #: FY341

	SAMPLE ANALYZED			
	Actual Samples	QC Samples	Re-Run Samples	Total Billable Analyses
Volatile Analyses	7	2	0	9
Semivolatile Analyses	6	2	1	9
Pesticide/PCB Analyses	6	2	0	8

Total Billable Analyses: 8 Full + 1 VOA + 1 BNA

This Deliverables Package is assembled in accordance with instructions in Section B, OLM01.8 revision of the Contract Laboratory Program - Statement of Work. A copy of this deliverable has been distributed to Region VI, the Sample Management Office (SMO) and EMSL-LV. In addition a sample Summary Data Package has been sent to SMO and a copy of the complete CSF File has been sent to Region VI.

The following is a detailed description of quality control, shipment, and/or analytical problems that were encountered in the processing of these samples.

18985 SAMPLE CUSTODY

SDG# FY341

ENCOTEC received seven samples from Federal Express on October 29, 1992 through October 30, 1992 without incident. Standard Chain of Custody procedures were followed. The samples were stored at 4°C and/or chemically preserved as required by EPA protocol. The samples were scheduled for full organic analysis.

18985 VOLATILES

SDG# FY341

Volatile sample analysis proceeded without any difficulties. Sample analysis took place on November 4, 1992 through November 5, 1992.

The method blank analysis revealed only one Target Compound as a blank contaminant Methylene Chloride (CAS# 75-09-2). This analyte was quantitated at a concentration less than the Contract Required Quantitation Limit (CRQL). One "Unknown" Tentatively Identified Compound (TIC) was detected in method blank "VBLKZE". This TIC was also quantitated at a relatively low concentration.

Sample analysis revealed multiple positive hits from the Target Compound List. The positively detected compounds were quantitated at various concentration levels. Several Tentatively Identified Compound were also detected in the samples.

QA/QC results were excellent. Surrogate recoveries revealed 0 out of 36 outside of the required percent recovery limits. MS/MSD analysis revealed 0 out of 5 Relative Percent Differences (RPD) and 0 out of 10 recoveries outside of advisory QA/QC windows. All EICP standard areas were within contract required windows. Please see the Sample Data Package for all details.

18985 EXTRACTIONS

SDG# FY341

Samples were extracted by separatory funnel for Pesticide/PCB's on November 2, 1992 and by continuous liquid-liquid

extraction for Semivolatiles on October 29, 1992 and November 3, 1992. All extracts were processed according to CLP protocol. Final extracts were given to the GC group on November 5, 1992 and to the GC/MS group on November 2, 1992 and November 5, 1992 for analysis.

18985 SEMIVOLATILES

SDG# FY341

Semivolatile analysis proceeded without many difficulties. Sample analysis took place on October 29, 1992 through November 11, 1992.

Method blank analysis revealed only two positively identified Target Compounds, Di-n-Butylphthalate (CAS# 84-74-2) and bis(2-Ethylhexyl)phthalate CAS# (117-81-7), which were detected at concentrations less than the Contract Required Quantitation Limit (CRQL). Several Tentatively Identified Compounds were also detected in the method blanks at relatively low concentrations.

Sample analysis revealed several positive hits from the Target Compound List. Multiple Tentatively Identified Compounds were also found in the samples. Sample FY437 required reanalysis to at a secondary dilution due to high levels of Hexachlorobutadiene (CAS# 87-68-3).

The QA/QC results were very good. Surrogate recoveries revealed only 0 out of 88 outside of the required QA/QC limits. MS/MSD analysis revealed 0 out of 11 Relative Percent Differences and 2 out of 22 recoveries outside of advisory QA/QC windows. All EICP standard areas were within contract required windows. Please see the Sample Data Package for complete details.

18985 PESTICIDES

SDG# FY341

Pesticide/PCB analysis proceeded without many difficulties. Sample analysis took place on November 11, 1992 through November 12, 1992.

Method blank analysis did not reveal any positively identified Target Compounds.

Sample analysis did not reveal and positively detected single

or multicomponent Targets.

QA/QC results were good. Surrogate recoveries revealed 3 out of 36 outliers outside advisory QA/QC windows. MS/MSD analysis revealed 0 out of 6 RPD and 0 out of 12 percent recoveries outside of advisory QA/QC windows. Please note that ENCOTEC uses "ZZZZZ" on Forms 8D to depict bad analytical runs. ENCOTEC also employs an "X" flag to indicate manual editing. Please see Sample Data Package for complete details.

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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

Thomas H. Marshall
CLP Project Manager
THM
75102

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devil's Swamp Ewell

Ref. Case No. 18931

SDG No. FY401

Date: 12-07-1992

Subject: **CLP Data Review**

From: Dr. Melvin Ritter, Chemist, Region VI M.C. Ritter 12/7

To: John Jones, Region 6, 6H-MA

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:

ORGANIC: Samples in this SDG# FY401 include the following:

FY401, FY402, FY404, FY406 - FY415 and FY500.

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HL
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: December 3, 1992

TO: Dr. Melvin Ritter, Chemist, US EPA, Region VI

FROM: Bill Blanton, ETM, ESAT, Region VI

Subject: CLP Data Review

Attached is the data review summary for Case # 18931
SDG # FY401
Site Devil's Swamp Ewell

COMMENTS:

1. The data package is provisional.
2. Three VOA analytes failed technical calibration criteria.
3. VOA sample FY-413 had low internal standard responses.
4. The data for one BNA initial calibration standard were omitted.
5. Twelve Pest/PCB samples had low surrogate recoveries.
6. Two column quantitations differed by more than 25% for some results in five Pest/PCB samples.
7. The laboratory failed to submit the acenaphthene spectrum for BNA sample FY-404DL.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931
LABORATORY RECMD
CONTRACT# 68-D2-0035
SDG NO. FY401
SOW# IFB SOW OLM01.8
ACCT# 3TFAJN34 SF# TFAUN1

SITE Devil's Swamp Ewell
NO. OF SAMPLES 14
MATRIX Soil
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Wallace Doong
COMPLETION DATE December 3, 1992

SAMPLE NO.				
FY-401	FY-407	FY-411	FY-415	
FY-402	FY-408	FY-412	FY-500	
FY-404	FY-409	FY-413		
FY-406	FY-410	FY-414		

DATA ASSESSMENT SUMMARY

	VOA	BNA	Pest/PCB	OTHER
1. HOLDING TIMES	O	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORMANCE	O	O	O	N/A
3. CALIBRATIONS	M	M	O	N/A
4. BLANKS	O	O	O	N/A
5. SMCs/SURROGATES	O	O	M	N/A
6. MATRIX SPIKE/DUPLICATES	O	O	O	N/A
7. OTHERS	N/A	N/A	N/A	N/A
8. INTERNAL STANDARDS	M	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	X	M	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	M	M	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: Three VOA analytes failed technical calibration criteria. VOA sample FY-413 had low internal standard responses. The data for one BNA initial calibration standard were omitted. Twelve Pest/PCB samples had low surrogate recoveries. Two column quantitations differed by more than 25% for some results in five Pest/PCB samples.

AREA OF CONCERN: The laboratory failed to submit the acenaphthene spectrum for BNA sample FY-404DL.

NOTABLE PERFORMANCE:

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18931 **SDG** FY401 **SITE** Devil's Swamp Ewell **LAB** RECMD

The following is a summary of sample qualifiers used by Region VI in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA		14	
BNA	13	1	
Pest/PCB	2	12	

COMMENTS: The case consisted of fourteen soil samples for RAS organics analysis. According to OTR/COC Records, sample FY-401 was the designated QC sample. The data package arrived on time for the contractual 14 day turnaround. Low level analyses were performed for all samples.

VOA: Sample FY-413 was reanalyzed due to low internal standard (IS) areas, but the original results should be used. The TCL analyte, 2-butanone, and the common laboratory contaminants, methylene chloride and acetone, were reported in the samples. Benzene and toluene were also detected <CRQLs in sample FY-410.

BNA: Sample FY-404 was diluted and reanalyzed due to a high level of bis(2-ethylhexyl)phthalate. Carbazole, N-nitrosodiphenylamine, PAHs, dichlorobenzenes, and common phthalate esters were also reported in some samples.

Pest/PCB: Aroclors 1248 and 1254 were reported >CRQLs in some samples. Endrin and endrin ketone were also reported <CRQLs in sample FY-411. All samples, except samples FY-402 and FY-404, had low surrogate recoveries. Two column quantitations differed by more than 25% for some results in five samples.

Data are provisional for all VOA, one BNA, and twelve Pest/PCB samples due to problems with calibration, internal standard response, surrogate recovery, compound quantitation, and missing data. An evidence audit was conducted for the Complete Sample Delivery Group File (CSF) and the CSF Inventory Checklist is attached to this report.

1. **Holding Times:** Acceptable. All samples were extracted and/or analyzed within contractual holding time limits.

2. **Tuning/Instrument Performance:** Provisional. The BFB and DFTPP analyses generally met GC/MS tuning criteria. VOA sample FY-413 was reanalyzed due to low IS responses, but the original results should be used because the reanalysis had the same problem. Results are estimated and biased low for VOA sample FY-413. The IS areas were within the QC limits for other VOA and all BNA samples. Pest/PCB analyses met instrument performance criteria.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18931 **SDG** FY401 **SITE** Devil's Swamp Ewell **LAB** RECMD

COMMENTS:

3. **Calibrations:** Provisional. Target compounds generally met contractual calibration criteria for VOA and Pest/PCB fractions. The reported BNA calibration results met contractual QC criteria, but the reviewer was unable to validate the reported results due to omission of some standard data. The results are provisional for BNA sample FY-411 pending laboratory submission of the standard data. The 4-nitrophenol result exceeded the calibration range for BNA sample FY-401MSD, but further dilution was not required. The following VOA results are estimated because the analytes failed technical %RSD and/or %D calibration criteria:

acetone and 2-butanone results for all samples; and

methylene chloride in samples FY-401, FY-411, FY-413RE, and FY-414.

4. **Blanks:** Acceptable. Method blanks and/or instrument blanks met QC requirements for all fractions. No TCL analytes were reported in BNA and Pest/PCB method blanks. Acetone and methylene chloride were reported <CRQLs in the VOA method blanks. In this reviewer's opinion, positive results are estimated for these VOA blank contaminants in all samples due to possible laboratory contamination.

5. **System Monitoring Compounds (SMCs)/Surrogates:** Provisional. The SMC and surrogate recoveries met QC guidelines for all VOA and BNA samples. BNA sample FY-414 had an outlying surrogate recovery (S4), but reanalysis was not required. Twelve Pest/PCB samples had low surrogate recoveries. In this reviewer's opinion, the results are estimated and biased low for the following Pest/PCB analytes due to low surrogate recoveries:

all TCL Pest/PCB analytes in samples FY-406, FY-407, FY-408, FY-409, FY-410, FY-411, FY-412, FY-413, FY-414, FY-415, and FY-500; and

AR1016, AR1221, AR1232, AR1242, AR1248, BHCs, heptachlor, aldrin, and heptachlor epoxide in sample FY-401.

6. **Matrix Spike/Matrix Spike Duplicate:** Acceptable. The matrix spike compounds met precision and accuracy criteria for all fractions.

7. **Compound Identity/Quantitation:** Provisional.

VOA: The TCL analyte, 2-butanone, and the common laboratory contaminants, methylene chloride and acetone, were reported in the samples. Benzene and toluene were also detected <CRQLs in sample FY-410. Sample spectra generally met identification criteria.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18931 **SDG** FY401 **SITE** Devil's Swamp Ewell **LAB** RECMD

COMMENTS:

7. Compound Identity/Quantitation (continued):

BNA: Sample FY-404 was diluted and reanalyzed due to a high level of bis(2-ethylhexyl)phthalate. Carbazole, N-nitrosodiphenylamine, PAHs, dichlorobenzenes, and common phthalate esters were also reported in some samples. The laboratory failed to submit the acenaphthene spectrum for sample FY-404DL. Since only the bis(2-ethylhexyl)-phthalate result would be used from this diluted analysis, sample data were unaffected. Other sample spectra generally met identification criteria.

Pest/PCB: Aroclors 1248 and 1254 were reported >CRQLs in some samples. Endrin and endrin ketone were also reported <CRQLs in sample FY-411. Some positive results were >CRQLs and "P" flagged because two column quantitations differed by more than 25%. All "P" flagged results are estimated in samples FY-401, FY-407, FY-411, FY-414, and FY-415.

8. Data completeness: Provisional. The data package was incomplete. One BNA initial calibration standard data were omitted. The laboratory was notified of the needed submission and corrections (see attached FAX Record Log).

9. Case Assessment: Data are provisional for all VOA samples due to deficiencies in calibration and internal standard performance. Data are provisional for BNA sample FY-411 due to omission of standard data. Data are provisional for twelve Pest/PCB samples due to problems with surrogate recovery and compound quantitation. Data are acceptable for thirteen BNA samples and Pest/PCB samples FY-402 and FY-404.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18931 SDG No. FY401 SDG Nos. To Follow SAS No. Date Rec 10/06/92

EPA Lab ID: RECRA Environmental, Inc.
Lab Location: 8320 Guilford, Columbia, MD 21046
Region: 6 Audit No.: 18931/FY401
Re_Submitted CSF? Yes ____ No X
Box No(s): 1

COMMENTS:

3. Form DC-1 should be paginated as pages 2139 to 2141, not from page 2140.

4. The following pages are not listed on Form DC-2: pages 11 to 14; 13; 2030 to 2078; and 2080 to 2092.

13. One of the three Airbills is not enclosed in the data package (#5266126412, 10/21/92).

14,15. One Airbill (#2500774275) is not signed and dated.

18. The heading of Form DC-2-3 is omitted.

20. The SDG Cover Sheet and Forms DC-1 are not the originals.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?		X	
14. Signed?		X	
15. Dated?		X	
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?		X	
19. Legible?	X		
20. Original?		X	
20a.If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen Thanh Then Nguyen — Kathleen T. Nguyen/Scientist — Date 10/24/92
Audited by: ____ — ____ — Date ____
Audited by: ____ — ____ — Date ____
Signiture — Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ____ Date Entered: ____ Date Reviewed: ____
Entered by: ____ ____
Reviewed by: ____ ____
Signature — Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713) 983-2136

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Linda S. Shafernich

Firm RECRA Environmental, Inc.

Address 8320 Guilford Road, Budg F

City Columbia **State** MD 21046

Telephone (301) 381-2288 **Ext.** _____

Fax Phone No. (301) 381-2329 **Ext.** _____

Sender:

Name Wallace Doong

Date December 4, 1992 **Time** _____

Total Number of pages including this Cover Sheet 6

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2136.

MESSAGES: Case: 18931 SDG: FY401

COMMENTS:

X	Please respond	_____	Correct as needed
_____	For your comments	_____	As you requested
_____	Please call me about this	_____	As we discussed
_____	Information only	_____	Review and forward

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
Case: 18931 SDG: FY401

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX:	December 4, 1992
Laboratory Name:	RECMD
Lab Contact:	Linda S. Shafernich
Region:	6
Regional Contact:	Wallace Doong- ESAT
Initiated by:	_____ Laboratory __X__ Region

In reference to data for the following fractions:

CSF Deliverables VOA BNA Pest/PCB

Summary of Questions/Issues:

A. CSF Deliverables:

1. The signature and sample receipt date were omitted on the Airbill No. 2500774275. Please complete and return the enclosed "Airbill Signature Form".

2. One Airbill (#5266126412, 10/21/92) was omitted. Please submit the original copy.

3. The following information and pages numbers were incorrectly reported or omitted on Forms DC-2:

   the heading information on Form DC-2 pages 3 and 4;

   p.1 to p.14; p.1399; p.2030 to p.2078; p.2080 to p.2092;

   pages numbers for sample log-in sheet (p.2095 to p.2136);

   miscellaneous shipping records (p.2139 to p.2141); and

   internal lab sample transfer records (p.2136A to p.2138).

   Please resubmit corrected original Forms DC-2.

B. VOA:

1. Sample FY-406: The chromatogram (RIC) must be normalized to the largest nonsolvent component (OLM01.2, B-10, 3.). Please resubmit pages 73 and 74.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact RECMD / Linda S. Shafernich
In Reference To Case No. 18931 **SDG:** FY401

Summary of Questions/Issues:

C. BNA:

1. Form 5: Incorrect standard concentrations were reported for the standard ID (should be ppm). Please resubmit page 368.

2. The data for one initial calibration standard (SSTD050, YG931, 10/30/92, 08:30) were omitted. Please submit.

D. Pest/PCB:

1. Form 8: Incorrect initial calibration dates were reported (should be 10/23/92 to 10/24/92). Please revise.

2. Forms I (pages 1939 and 1947): The sample receipt dates were erroneously reported (should be 10/21/92). Please resubmit both Forms I for samples FY-401MS/MSD.

D. Pest/PCB (continued):

3. Sample IDs were omitted on pages 1443 and 1444 for sample FY-408 and on pages 1478 to 1483 for sample FY-414. Please resubmit these pages.

   Note: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new Form DC-2 (OLM01.0, p.B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items **within 14 days** to:

Ms. Christy Macdowell - ESAT
US EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2136.

Wallace Dong
Signature

December 4, 1992
Date

Distribution: (1) Lab Copy,(2) Region Copy,(3) SMO Copy

TRANSMITTAL LETTER
FOR AIRBILL SIGNATURE FORM

November 24, 1992

Ms. Linda S. Shafernich
RECRA ENVIRONMENTAL, INC.
8320 Guilford Road, Buiding F
Columbia, Maryland 21046

RE: Airbill No. 2500774275 is not signed and dated

Dear Ms. Shafernich :

Region VI routinely audits all CSFs received from laboratories participating in the Contract Laboratory Program (CLP).

During an audit of case/SDG 18931/FY401 conducted on 11/24, 1992 the following discrepancy was noted:

Airbill No. 2500774275 was not signed and dated by laboratory personnel.

Enclosed please find one Airbill Signature Form. The individual who received the sample(s) or authorized ~~Southwest Research Institute~~ RECRA ENVIRONMENTAL, INC. TN. 12/02/92 (laboratory) lab personnel to complete this form and return it to the region within ten working days after receipt of this letter. I have enclosed copies of the Airbill, Traffic Reports, and Chain-of-Custody Records to be used as references.

Please call Kathleen Nguyen (ESAT-ManTech) at 713-983-2100 (telephone number) if you have any questions.

Sincerely,

Melvin C. Ritter

(Regional Representative)

Enclosures

EPA Regional Completeness Evidence Audit
AIRBILL.LET

REGION VI
AIRBILL SIGNATURE FORM

EPA case/SDG 18931/FY401 was audited by Region VI and Airbill No. 2500774275 was not signed and dated by the laboratory personnel.

I, _____, do hereby attest that RECRA ENVIRONMENTAL, INC
(print name) (laboratory)

received samples FY406 to FY410 and FY500 for EPA case/SDG(s) 18931/FY401
(identificationnumber(s))

into custody at RECRA ENVIRONMENT, INC. on October 22, 1992.
(laboratory) (date)

_____
Signature

_____
Date

Received by the region on _____, 19____.

by _____

FEDERAL EXPRESS

QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE
TRACKING NUMBER

2500774275

2500774275

RECIPIENT'S COPY

Date 10/21/92

From (Your Name) Please Print: JEFF AVERS

Your Phone Number (Very Important): (214)754-8165

Company: P R L

Department/Floor No.:

Street Address: 350 N ST PAUL STE 2650

City: DALLAS State: TX ZIP Required: 7 5 2 0 1

2 To (Recipient's Name) Please Print: TRACY ZACHEISS Recipient's Phone Number (Very Important): (410) 381-2258

Company: RECRA ENVIRONMENTAL, INC.

Department/Floor No.:

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.): 8320 GUILFORD ROAD, BLDG. F

City: COLUMBIA State: MD ZIP Required: 21046

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.): - 002606/1232

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

3 PAYMENT 1 ☐ Bill Sender 2 ☐ Bill Recipient's FedEx Acct No 3 ☐ Bill 3rd Party FedEx Acct No 4 ☐ Bill Credit Card
5 ☐ Cash/Check

4 SERVICES (Check only one box)

Priority Overnight (Delivery by next business morning.)
- 11 ☒ YOUR PACKAGING
- 16 ☐ FEDEX LETTER *
- 12 ☐ FEDEX PAK *
- 13 ☐ FEDEX BOX
- 14 ☐ FEDEX TUBE

Standard Overnight (Delivery by next business afternoon.)
- 51 ☐ YOUR PACKAGING
- 56 ☐ FEDEX LETTER *
- 52 ☐ FEDEX PAK *
- 53 ☐ FEDEX BOX
- 54 ☐ FEDEX TUBE

Economy Two-Day (Delivery by second business day.)
- 30 ☐ ECONOMY

Government Overnight (Restricted to authorized offices only.*)
- 46 ☐ GOVT LETTER
- 41 ☐ GOVT PACKAGE

Freight Service (no Extra Large or any package over 150 lbs.)
- 70 ☐ OVERNIGHT FREIGHT ** (Confirmed reservation required.)
- 80 ☐ TWO-DAY FREIGHT **

† Delivery commitment may be later in some areas
*Declared Value Limit $100
**Call for delivery schedule

5 DELIVERY AND SPECIAL HANDLING (Check services required)
- 1 ☐ HOLD FOR PICK-UP (If box H)
- 2 ☒ DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) ☐ (Not available to all locations.)
- 4 ☐ DANGEROUS GOODS (Extra charge)
- 5 ☐
- 6 ☐ DRY ICE
- 7 ☐ [illegible] SPECIAL SERVICE
- 8 ☐
- 9 ☐ SATURDAY PICK-UP (Extra charge)
- 10 ☐
- 11 ☐
- 12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE
1	42	
Total	Total 42	Total

Del. Sh. Wt. (Chargeable Weight) ☐ lbs

x x

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1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C.
5 ☐ Station

7 Release Signature:
FedEx Emp No Date/Time

Emp No Date
☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del ☐ Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 6
PART #153204
FORMAT #099
099

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 1893,

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/22/92	Fed-X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 250077442 6

Non-Superfund Program

Sampler Signature: Jeff Ayers

Site Name: Devil's Swamp / Ewell

City, State: Scotlandville, La

Site Spill ID:

Type of Activity — Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI (X); Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

5. Ship To:
Recra Environmental
8320 Guilford Rd Bldg F
Columbia, MD 21046
(410) 381-2288
ATTN: Tracy Zacheiss

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
F4414	5	L	G	N	X				6-013979	DS-SS 14	10/21/92 1430	PD	MF2714	—
F4414			G		X				6-013980					—
F4414			C			X	X		6-013981					—
F4415			G		X				6-013983	DS-SS 15	10/21/92 1600		MF2715	—
F4415			G		X				6-013984					—
F4415			C			X	X		6-013985					—

Shipment for Case complete? (Y/N): (Y)

Page 1 of ____

Sample used for a spike and/or duplicate: —

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Ayers	10/22/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to Region Yellow - Lab Copy for Return to SMO

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

O340648

1-90

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Ch[illegible] of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 1893.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/22/92	Fed-X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 250077 4426

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To:
Recra Labs
8320 Guilford Rd., Bldg. F
Columbia, MD 21046
(410) 381-2288
ATTN: Tracy Zacheiss

Site Name: Devil's Swamp / Ewell

City, State: Scotlandville, La

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI X	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/ Grab	D Preservative from Box 6	E RAS Analysis: VOA	E: BNA	E: Pest/ PCB	E: High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
EY411	5	L	G	N	X				6-013967	DS-SS11	10/21/92 0930	PD	MFZ711	—
EY411			G		X				6-013968					—
EY411			C			X	X		6-013969					—
EY412			G		X				6-013971	DS-SS12	10/21/92 1100		MFZ712	—
EY412			G		X				6-013972					—
EY412			C			X	X		6-013973					—
EY413			G		X				6-013975	DS-SS13	10/21/92 1145		MFZ713	—
EY413			G		X				6-013976					—
EY413			C			X	X		6-013977					—

Shipment for Case complete? (Y/N)

Page 1 of ___

Sample used for a spike and/or duplicate

Additional Sampler Signatures

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/22/92 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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O340647

1 of 6

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

(For Organic CLP Analysis)

SAS No. (If applicable):

Case No.: 18901

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/21/92	FEDERAL EXPRESS

Regional Information

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 250077 4275

Non-Superfund Program

Sampler Signature: Jeffrey T. Ayers

5. Ship To: RECRA ENVIRONMENTAL, INC. 8320 GUILFORD RD, BLDG F COLUMBIA, MD 21046 (410) 381-2288 ATTN: TRACY ZACHEISS

Site Name: DEVIL'S SWAMP

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

City, State: SCOTLANDVILLE, LA

Site Spill ID:

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank, S = Spike, D = Duplicate, PE = Perform. Eval., — = Not a QC Sample)
FY408	5	L	G	N	X				6-013955	AX ~~DS-SS-06~~	10/20/92/1405	PDD	MFZ708	—
FY408	5	L	G	N	X				6-013956	DS-SS-08	10/20/92/1405	PDD	MFZ708	—
FY408	5	L	C	N		X	X		6-013957	DS-SS-08	10/20/92/1405	PDD	MFZ708	—
FY409	5	L	G	N	X				6-013959	DS-SS-09	10/20/92/1525	PDD	MFZ709	—
FY409	5	L	G	N	X				6-013960	DS-SS-09	10/20/92/1525	PDD	MFZ709	—
FY409	5	L	C	N		X	X		6-013961	DS-SS-09	10/20/92/1525	PDD	MFZ709	—
FY410	5	L	G	N	X				6-013963	DS-SS-10	10/20/92/1606	PDD	MFZ710	—
FY410	5	L	G	N	X				6-013964	DS-SS-10	10/20/92/1606	PDD	MFZ710	—
FY410	5	L	C	N		X	X		6-013965	DS-SS-10	10/20/92/1606	PDD	MFZ710	—

Shipment for Case complete? (Y/N): N

Page 1 of ___

Sample used for a spike and/or duplicate: —

Additional Sampler Signatures: Paul Dubow

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeffrey T. Ayers	10/21/92 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

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0340642

Pg 1

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 189.1

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/21/92	FEDERAL EXPRESS

Regional Information:

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 250077427 5

Non-Superfund Program:

Sampler Signature:

5. Ship To: RECRA ENVIRONMENTAL, INC. 8320 GUILFORD ROAD, BLDG F COLUMBIA, MD 21046 (410) 381-2288 ATTN: TRACY ZACHEISS

Site Name: DEVIL'S SWAMP/EWELL

3. Type of Activity: Lead / Pre-Remedial / Remedial / Removal

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI X	O&M	OIL
			NPLD	UST

City, State: SCOTLANDVILLE, LA

Site Spill ID:

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY407	5	L	G	N	X				6-013947	DS-SS-05	10/20/92/1040	PDD	MFZ707	—
FY407	5	L	G	N	X				6-013948	DS-SS-05	10/20/92/1040	PDD	MFZ707	—
FY407	5	L	G	N		X	X		6-013949	DS-SS-05	10/20/92/1040	PDD	MFZ707	—
FY406	5	L	G	N		X	X		6-013945	DS-SS-06	10/20/92/1130	PDD	MFZ706	—
FY406	5	L	G	N	X				6-013943	DS-SS-06	10/20/92/1130	PDD	MFZ706	—
FY406	5	L	G	N	X				6-013944	DS-SS-06	10/20/92/1130	PDD	MFZ706	—
FY500	5	L	G	N		X	X		6-013953	DS-SS-07	10/20/92/1237	PDD	MFZ801	—
FY500	5	L	G	N	X				6-013951	DS-SS-07	10/20/92/1237	PDD	MFZ801	—
FY500	5	L	G	N	X				6-013952	DS-SS-07	10/20/92/1237	PDD	MFZ801	—

Shipment for Case complete? (Y/N): Y

Page 1 of ___

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/21/92 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

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O340641

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18931

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	Fed X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 526126412

Non-Superfund Program

Sampler Signature: Jeff Ayers

5. Ship To: Recra Environmental, Inc.
8320 Guilford Rd, BLDG F
Columbia, MD 21046
ATTN: Tracy Zacheiss
(410) 381-2288

Site Name: Devil's Swamp

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI X	O&M	OIL
			NPLD	UST

City, State: Scottsdville, La

Site Spill ID

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter In Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis VOA	E BNA	E Pest/ PCB	E High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY404	5	L	G	N	X				6-013936	DS-SS04	10/19/92 1600	JTA	MFZ704	—
FY404	5	L	C	N		X	X		6-013937	DS-SS04	10/19/92 1600	JTA	MFZ704	—
FY405	4	L	G	N	X				6-013878	DS-ER01	10/19/92 1048	MJ	MFZ705	B
FY405	4	L	G	N	X				6-013879	DS-ER01	10/19/92 1048	MJ	MFZ705	B
FY405	4	L	C	N		X			6-013876	DS-ER01	10/19/92 1048	MJ	MFZ705	B
FY405	4	L	C	N			X		6-013877	DS-ER01	10/19/92 1048	MJ	MFZ705	B

11/5/92

Shipment for Case complete? (Y) N

Page 1 of 2

Sample used for a spike and/or duplicate: —

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Ayers	102092 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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0340638

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Ch[illegible] of Custody Record

(For Organic CLP Analysis)

SAS No. (If applicable):

Case No.: 1893.

1. Project Code	Account Code	2. Region No.	Sampling Co...	4. Date Shipped	Carrier
		6	PRC	10/20/92	Fed-X

Regional Information	Sampler (Name)	Airbill Number
	Jeff Ayers	5266126412

Non-Superfund Program	Sampler Signature	5. Ship To
	Jeff Ayers	Recra Environmental, Inc. 8320 Guilford Rd, BLD6F Columbia, MD 21046 (410) ATTN: Tracy Zacheiss 381-2288

Site Name	City, State	Site Spill ID
Devils Swamp	Scottsville, La	

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY401	5	L	G	N	X				6-013927	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY401	5	L	G	N	X				6-013926	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY401	5	L	C	N		X	X		6-013928	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY402	5	L	G	N	X				6-013929	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY402	5	L	G	N	X				6-013930	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY402	5	L	C	N		X	X		6-013931	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY403	5	L	G	N	X				6-013932	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY403	5	L	G	N	X				6-013933	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY403	5	L	C	N		X	X		6-013934	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY404	5	L	G	N	X				6-013935	DS-SS04	10/19/92 1600	JTA	MFZ704	—

11/5/92

Shipment for Case complete? (Y/N)	Page 1 of 2	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number
		FY401 / FY403		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Ayers	102092 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

O340637

RECRA ENVIRONMENTAL, INC.

Chemical and Environmental Analysis Services

November 5, 1992

Ms. Meg Jou
USEPA Region VI Laboratory
10625 Fallstone Road
Houston, TX 77099

Re: Analytical Results

Dear Ms. Jou:

Please find enclosed results concerning the analysis of the samples recently submitted.

Pertinent Information:

Matrix:	SOIL
Samples Received:	October 21, 22, 23, 1992
Case Number:	18931
SDG Number:	FY401
Job Number:	MD92309, MD92317, MD92316

If you have any questions concerning these data, do not hesitate to contact our customer service department at (410) 381-2288.

Sincerely,

Linda Shafernich
Laboratory Manager

LSS/acb
Enclosure

I.D. #MD92309, MD92317,
MD92316
#MD2A4238
#68D20035

8320 Guilford Road, Building F • Columbia, Maryland 21046 • Office: (301) 381-2288 • Fax: (301) 381-2329

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME RECRA Environmental, Inc.
CITY, STATE Columbia, Maryland

CASE NO. 18931 SDG NO. FY401 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

CONTRACT NO. 68D20035
SOW NO. OLM01.

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs FROM	TO	CHECK LAB	EPA
Inventory Sheet (Form DC-2) (Do not number)	N/A	N/A	✓	✓
SDG Case Narrative				1-5
SDG Cover Sheet/Traffic Report				6-12
Volatiles Data				
a. QC Summary	15	31	✓	14-31
System Monitoring Compound Summary (Form II VOA)	16	16	✓	✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	17	17	✓	✓
Method Blank Summary (Form IV VOA)	19	21	✓	
GC/MS Instrument Performance Check (Form V VOA)	22	27	✓	✓
Internal Standard Area and RT Summary (Form VIII VOA)	28	31	✓	✓
b. Sample Data	32	219	✓	
TCL Results - (Form I VOA)			✓	✓
Tentatively Identified Compounds (Form I VOA-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			✓	✓
Quantitation reports			✓	✓
Mass spectra of all reported TICs with three best library matches			✓	✓
c. Standards Data (All Instruments)	220	286	✓	
Initial Calibration Data (Form VI VOA)			✓	✓
RICs and Quan Reports for all Standards			✓	✓
Continuing Calibration Data (Form VII VOA)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
d. Raw QC Data	287	354	✓	
BFB	288	305	✓	
Blank Data	306	346	✓	
Matrix Spike/Matrix Spike Duplicate Data	347	354	✓	

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 8931 SDG NO. FY401 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Semivolatiles Data				
a. QC Summary	355	394		
Surrogate Percent Recovery Summary (Form II SV)	357	357		
MS/MSD Summary (Form III SV)	358	358		
Method Blank Summary (Form IV SV)	359	359 363 GM 11-3-92		
GC/MS Instrument Performance Check (Form V SV)	364	372		
Internal Standard Area and RT Summary (Form VIII SV)	373	384		
b. Sample Data	385	1085		
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)				
Reconstructed total ion chromatograms (RIC) for each sample				
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds				
Quantitation reports				
Mass spectra of TICs with three best library matches				
GPC chromatograms (if GPC performed)				
c. Standards Data (All Instruments)	1086	1240		
Initial Calibration Data (Form VI SV-1, SV-2)				
RICs and Quan Reports for all Standards				
Continuing Calibration Data (Form VII SV-1, SV-2)				
RICs and Quantitation Reports for all Standards				
Semivolatile GPC Calibration Data-UV detector traces				
d. Raw QC Data	1241	1398		
DFTPP	1242	1268		
Blank Data	1269	1384		
Matrix Spike/Matrix Spike Duplicate Data	1385	1398		
Pesticides				
a. QC Summary	1400	1404		1399-14
Surrogate Percent Recovery Summary (Form II PEST)	1401	1401		
MS/MSD Duplicate Summary (Form III PEST)	1402	1402		
Method Blank Summary (Form IV PEST)	1403	1404		

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Pesticides (cont.)				
b. Sample Data	1405	1496		
TCL Results - Organic Analysis Data Sheet (Form I PEST)			___	___
Chromatograms (Primary Column)			___	✓
Chromatograms from second GC column confirmation			___	✓
GC Integration report or data system printout			___	✓
Manual work sheets			___	NA
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)			___	NA
c. Standards Data	1497	1864		
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)			___	✓
Initial Calibration of Multicomponent Analytes (Form VI PEST-3)			___	___
Analyte Resolution Summary (Form VI PEST-4)			___	✓
Calibration Verification Summary (Form VII PEST-1)			___	✓
Calibration Verification Summary (Form VII PEST-2)			___	✓
Analytical Sequence (Form VIII PEST)			___	✓
Florisil Cartridge Check (Form IX PEST-1)			___	✓
Pesticide GPC Calibration (Form IX PEST-2)			___	✓
Pesticide Identification Summary for Single Component Analytes (Form X PEST-1)			___	✓
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)			___	✓
Chromatograms and data system printouts A printout of retention times and corresponding peak areas or peak heights			___	✓
Pesticide GPC calibration data - UV detector traces			___	✓
d. Raw QC Data	1865	1954	___	✓
Blank Data	1866	1938	___	✓
Matrix Spike/Matrix Spike Duplicate Data	1939	1954	___	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	1955	2028		✓
Internal sample and sample extract transfer chain-of-custody records				—
Screening records	2029			2029-2078
All instrument output, including strip charts from screening activities (describe or list)				
Holding Blk	2079			2079-2092
				—
EPA Shipping/Receiving Documents				
Airbills (No. of shipments ___)	2093	2094		✓ (B)
Chain-of-Custody Records				6-11
Sample Tags	2095	2139		✓ 2095-213
Sample Log-In Sheet (Lab & DC1)	2140	2141		✓ 2139-21
Miscellaneous Shipping/Receiving Records (describe or list)				
				—
				—
Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
				2136A-2138
				—
Other Records (describe or list)				
Telephone Communication Log	2142			✓
				—
				—

Comments: (A) Pg. 13 [illegible] enclosed (B) Airbill (# 5266126412 was omitted)

eted by: (P Lab) Geoff D. Maloney (Signature) Geoff D. Maloney (Printed Name/Title) 11-5-92 (Date)

ed by: (A) [illegible] (Signature) [illegible] (Printed Name/Title) [illegible] (Date)

[illegible] [illegible] [illegible] 12/3/92

FORM DC-2-4

OLM01.7 7/9

Case: 18931
Contract: 68D20035

SDG Narrative
SDG: FY401

Sample Numbers:

FY401	FY402	FY404	FY404DL	FY406
FY407	FY408	FY409	FY410	FY411
FY412	FY413	FY413RE	FY414	FY415
FY500				

Recra Environmental, Inc. of Columbia, Maryland received from the U.S. EPA a case of samples on October 21, 22, 23, 1992. This sample delivery group contained 15 soils for Full Organic Analysis. These analyses were performed according to instructions in the IFB document for this contract.

Volatile Analysis:

Sample FY413 demonstrated internal standard recoveries below acceptable QC limits. This sample was reanalyzed with similar results, thus indicating matrix interferences were present. Both analyses are submitted and are billable.

Semivolatile Analysis:

Sample FY404 was also analyzed at a dilution due to a target compound exceeding the calibration range.

Although compliant, sample FY414 exhibit one surrogate recovery outside of acceptable limits.

Pesticide/PCB Analysis:

Sample FY411 appears to have AR1254 present, but since the relative peaks are found just outside of retention time windows, the Aroclor was not identified or quantitated. The Pesticides which were identified are probably not true hits, due to common peaks shared with the Aroclor.

Samples FY401, FY401MS, FY401MSD, FY404, FY408, FY409, FY414 and FY415 all contain AR1260. Due to common peaks shared between AR1254 and AR1260, only AR1254 has been identified and quantitated in this report.

Samples FY404, FY407, FY408 and FY409 appear to have AR1248 present, but since all peaks neccesary for identification are not within retention time windows, this Aroclor has not been identified or quantitated in these samples.

Samples FY401MS and FY401MSD also contain AR1248. Due to common peaks shared between this Aroclor and the Matrix Spike compounds, only the Matrix Spike compounds have been identified and quantitated.

GC/MS quantitation reports for both samples and/or standards contained within this sample data package often require manual integration of the areas of the quantitation ion for select constituents. When such manual integration is required the quantitation report for said constituents are flagged with an "M". The need for manual integration includes, but is not necessarily limited to, the autoquantitation program's failure to integrate peaks of interest or the failure to correctly integrate said peaks due to poor geometry, peak tailing or peak resolution.

A listing of the quantitation ions used for the GC/MS analyses is included on the following pages.

Please call if you have any questions or other concerns which require clarification.

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 the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Linda Shaf

Linda S. Shafernich
Laboratory Manager

11-5-92
Date

RECRA
ENVIRONMENTAL
INC.

2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Ref. Case No. 18931

Site Name Devils Swamp Ewell

Date: 11-20-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:

ORGANIC: FY-403

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-20-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, 6E-HO, Region 6

To: Dr. Melvin Ritter , Chemist , Region 6

Attached is the data review summary for Case # 18931
SDG # FY-403
Site Devils Swamp Ewell

Data was found: ( ) Acceptable
(X) Provisional
( ) Unacceptable

Action required by TPO: ( ) Yes
(X) No

COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931
LABORATORY RECMD
CONTRACT# 68-D2-0035
SDG# FY403
SOW# RAS SOW OLM01.8
ACCT# 3TFAJN34 SF# TFAUN1

SITE Devils Swamp Ewell
NO. OF SAMPLES 1
MATRIX Soil
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Feng-Chao Kuo
COMPLETION DATE November 18, 1992

SAMPLE NO. FY-403

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O	N/A
3. CALIBRATIONS	M	O	X	N/A
4. BLANKS	O	O	O	N/A
5. SURROGATES/SMC	O	O	O	N/A
6. MATRIX SPIKE/DUP	O	O	O	N/A
7. OTHER QC	N/A	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	O	O	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	O	X	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: Acetone, methylene chloride, and 2-butanone exceeded technical %RSD and/or %D calibration criteria.

AREA OF CONCERN: Raw data for the ending initial calibration analyses, PIBLKG2 and PEMG2, were omitted for DB-608 column.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 18931 SDG: FY403 **SITE** Devils Swamp Ewell **LAB** RECMD

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	0	1	
BNA	1	0	
PEST	1	0	
OTHER	N/A	N/A	

COMMENTS: The case consisted of 1 soil sample for complete RAS CLP organics analysis. The data package arrived on time for the 14 day contractual turnaround. The sample was analyzed at low level for all fractions. Methylene chloride, acetone, 2-butanone, and bis(2-ethylhexyl)phthalate were detected >CRQLs in the sample. Data are provisional for the VOA fraction due to calibration deficiencies.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF) and the Evidence Inventory Checklist is attached to this report.

1. **Holding Times** - Acceptable. The sample met contractual holding time criteria.

2. **Tuning/Performance** - Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Internal standard areas and retention time performance met QC guidelines for VOA and BNA fractions. Pest/PCB analyses met instrument performance criteria.

3. **Calibrations** - Provisional. All compounds generally met contractual calibration criteria for the initial and the continuing calibrations for all fractions. Acetone, methylene chloride, and 2-butanone exceeded technical %RSD and/or %D calibration criteria. The results for these compounds are estimated in sample FY-403. Raw data for the ending initial calibration for Pest/PCB were omitted for one column. Pest/PCB data were not qualified because the continuing calibrations that bracketed all sample analyses met calibration criteria.

4. **Blanks** - Acceptable. The method and instrument blanks generally met contractual criteria. The common laboratory contaminants, methylene chloride and acetone, were detected <CRQL in the VOA method blank. The methylene chloride and acetone results in sample FY-403 are not qualified because the concentrations exceeded 10X the blank levels.

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 18931 SDG: FY403 **SITE** Devils Swamp Ewell **LAB.** RECMD

COMMENTS:

5. System Monitoring Compounds (SMCs)/Surrogates - Acceptable. All SMCs and surrogate recoveries were within the QC limits.

6. Matrix Spike/Matrix Spike Duplicate - Acceptable. All MS/MSD recoveries were within the advisory QC limits.

7a. Compound Identity - Acceptable. Methylene chloride, acetone, 2-butanone, and bis(2-ethylhexyl)phthalate were detected >CRQLs, while 1,2-dichlorobenzene, pyrene, phenanthrene, ß-BHC, and Aroclor-1254 were detected <CRQL in sample FY-403. Sample spectra met identification criteria for the VOA and BNA fractions.

7b. Data Completeness - Provisional. The data package was incomplete. Raw data for the instrument blank and performance evaluation mixture at the end of the initial calibration sequence were omitted for one column. The laboratory was contacted for the needed correction and resubmission (see attached FAX Record Log).

8. Case Assessment - The data are acceptable for BNA and Pest/PCB fractions. The VOA data are provisional due to calibration deficiencies.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

ase No. 18931 SDG No. FY403 SDG Nos. To Follow SAS No. Date Rec 11/04/92

EPA Lab ID: RECMD
Lab Location: 8320 Guilford Rd. Columbia,MD2104
Region: 6 Audit No.: 18931/FY403
Re_Submitted CSF? Yes ____ No X
Box No(s): 1
COMMENTS:

Item No.	Comments
4	The page between page 411 and page 412 was not paginated.
5	Page 413 was omitted in the data package.
20, 20a	The SDG cover sheet and Form DC-1 were not original.

* The laboratory was contacted for these deficiencies.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?		X	
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a.If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen Thanhtien Nguyen — Kathleen Nguyen/Associate Scientist — Date 11/10/92
Audited by: Feng-Chao Kuo — Feng-Chao Kuo/Data Reviewer — Date 11/17/92
Audited by: ____ — ____ — Date ____

Signature — Printed Name/Title

TO BE COMPLETED BY CEAT

ate Recvd by CEAT: ____ Date Entered: ____ Date Reviewed: ____
Entered by: ____
Reviewed by: ____

Signature — Printed Name/Title

ManTech Environmental Technology, Inc.
SAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713)983-2138

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Linda Shafernich

Firm RECMD

Address 8320 Guilford Road, Bldg. F

City Columbia **State** MD 21046

Telephone (410) 381-2288 **Ext.** _____

Fax Telephone No. (410) 381-2329 **Ext.** _____

Sender:

Name Feng-Chao Kuo

Date November 18, 1992 **Time** _____

Total Number of pages including this Cover Sheet 4

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2138.

MESSAGES: Case:18931 SDG:FY403

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
18931 SDG:FY403

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 18, 1992
Laboratory Name: RECMD
Lab Contact: Linda Shafernich

Region: 6
Regional Contact: Feng-Chao Kuo - ESAT

FAX initiated by: _____Laboratory ___X___Region

In reference to data for the following fractions:

CSF deliverable Pest/PCB

Summary of Questions/Issues:

A. CSF deliverable

1. All CSF deliverables must be originals (SOW OLM01.0, B-21, B-21, E.1). If the originals are not available, the location for the originals must be indicated on the submitted copies. Please submit original copies for the following documents or indicate their locations of them:

   (a). The SDG cover sheet (p. 7), and
   (b). The Form DC-1 (p. 499).

3. The page between p. 411 and p. 412 was not paginated while page 413 was omitted in the data package. Please correct the page No.'s and submit the necessary replacement pages.

B. Pest/PCB

1. The standard concentration for methoxychlor should be 3.2 ng, not 0.32 ng, in standard INDAHG1 and INDAHH1. Please correct and resubmit pages 317 and 384.

2. Due to mislabeling of EPA Sample No., wrong data were submitted for some PEM's and instrument blanks for DB-608 column. The following table listed the affected analyses and data pages:

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact RECMD/Linda Shafernich
In Reference To Case No. 18931 **SDG:** FY403

B. Pest/PCB (continued)

The incorrect EPA Sample No. reported	Analysis Time	Page No.	Correct EPA Sample No.
PIBLKG2	10/27/92, 8:42	320, 321, 442, 443	PIBLKG3
PEMG2	10/27/92, 9:12	322, 323	PEMG3
PIBLKG3	10/27/92, 15:37	324, 325, 445, 446	PIBLKG4
PIBLKG4	10/28/92, 4:01	330, 331, 448, 449	PIBLKG5
PEMG3	10/28/92, 4:32	332, 333	PEMG4

Due to the mislabeling, raw data for PIBLKG2 and PEMG2 were actually omitted in the data package. Please correct the mistakes and submit the correct replacements for all the listed pages with proper pagination.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM01.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

FAX COMMUNICATION LOG

Continuation Page 3
Laboratory/Contact RECMD/Linda Shafernich
In Reference To Case No. 18931 **SDG:** FY403

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 14 days** to:

Ms. Christy Macdowell - ESAT
c/o U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2138

Feng-chao Kuo
Signature

November 18, 1992
Date

Distribution: (1) Lab Copy,(2) Region Copy,(3) SMO Copy

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18931

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/20/92	Fed-X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 526612641 2

Non-Superfund Program

Sampler Signature: Jeff Ayers

5. Ship To: Recra Environmental, Inc.
8320 Guilford Rd, BLDGF
Columbia, MD 21046
ATTN: Tracy Zacheiss (410) 381-2288

Site Name: Devils Swamp

City, State: Scotlandville, La

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI X	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis VOA	E BNA	E Pest/ PCB	E High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY401	5	L	G	N	X				6-013927	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY401	5	L	G	N	X				6-013926	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY401	5	L	C	N		X	X		6-013928	DS-SS01	10/19/92 1430	JTA	MFZ701	S
FY402	5	L	G	N	X				6-013929	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY402	5	L	G	N	X				6-013930	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY402	5	L	C	N		X	X		6-013931	DS-SS02	10/19/92 1500	JTA	MFZ702	—
FY403	5	L	G	N	X				6-013932	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY403	5	L	G	N	X				6-013933	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY403	5	L	C	N		X	X		6-013934	DS-SS03	10/19/92 1510	JTA	MFZ703	D
FY404	5	L	G	N	X				6-013935	DS-SS04	10/19/92 1600	JTA	MFZ704	—

4/5/93

Shipment for Case complete? (Y/N): Y

Page 1 of 2

Sample used for a spike and/or duplicate: FY401 / ~~FY403~~

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date /
Jeff Ayers	102092 1000			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date /
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody

RECMD

Dog

Split Samples ☐ Accepted (Signature)

☐ Declined

EPA Form 9??? ? (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION: Blue - Region Copy Pink - SMO Copy White - Lab Copy for Return to Region Yellow - Lab Copy for Return to SMO

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

0240637

1-90

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE: 02/11/93 CASE #: 18931

SAS # :

TO: REM/RED SDG # : FY403

C/O J. Jones (6H-MA) LAB : RECMD

FROM: Feng-Chao Kuo - ESAT SITE NAME: Devil Swamp Ewell

Region 6

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response to Region 6 request.

A. CSF deliverable

1. (a). The original SDG cover sheet for this SDG was submitted to SMO.

   (b). All original DC-1 forms are maintained in the laboratory.

3. Use the resubmitted pages 411A, 411B, 412, and 413.

B. Pest/PCB

1. Use the resubmitted pages 317 and 384.

2. Use the resubmitted data for PIBLKG3 (p. 320, 321, 442, and 443), PEMG3 (p. 322 and 323), PIBLKG4 (p. 324, 325, 445, and 446), PIBLKG5 (p. 330, 331, 448, and 449), and PEMG4 (p. 332 and 333).

   Two sets of resubmissions were received for PIBLKG2 and PEMG2. Use only the paginated copies of these data (p. 319A, 319B, 319C, and 319D).

RECRA ENVIRONMENTAL, INC.

Chemical and Environmental Analysis Services

November 3, 1992

Ms. Meg Jou
USEPA Region VI Laboratory
10625 Fallstone Road
Houston, TX 77099

Re: Analytical Results

Dear Ms. Jou:

Please find enclosed results concerning the analysis of the samples recently submitted.

Pertinent Information:

Matrix:	SOIL
Samples Received:	October 21, 1992
Case Number:	18931
SDG Number:	FY403
Job Number:	MD92315

If you have any questions concerning these data, do not hesitate to contact our customer service department at (410) 381-2288.

Sincerely,

Linda S. Shafernich
Laboratory Manager

LSS/acb
Enclosure

I.D. #MD92315
#MD2A4238
#68D20035

8320 Guilford Road, Building F • Columbia, Maryland 21046 • Office: (301) 381-2288 • Fax: (301) 381-2329

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME RECRA Environmental, Inc.
CITY/STATE Columbia, Maryland

CASE NO. 18931 SDG NO. FY403 SDG NOS. TO FOLLOW FY402, FY401
SAS NO.

CONTRACT NO. 68D20035
SOW NO. OLM01.X

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
Inventory Sheet (Form DC-2) (Do not number)	N/A	N/A		✓
SDG Case Narrative	1	5	✓	✓
SDG Cover Sheet/Traffic Report	6	7	✓	✓
Volatiles Data				
a. QC Summary	8	18	✓	✓
System Monitoring Compound Summary (Form II VOA)	10		✓	✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	11		✓	✓
Method Blank Summary (Form IV VOA)	12	13	✓	✓
GC/MS Instrument Performance Check (Form V VOA)	14	16	✓	✓
Internal Standard Area and RT Summary (Form VIII VOA)	17	18	✓	✓
b. Sample Data	19	32	✓	
TCL Results - (Form I VOA)			✓	✓
Tentatively Identified Compounds (Form I VOA-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			✓	✓
Quantitation reports			✓	✓
Mass spectra of all reported TICs with three best library matches			✓	✓
c. Standards Data (All Instruments)	33	66	✓	
Initial Calibration Data (Form VI VOA)			✓	✓
RICs and Quan Reports for all Standards			✓	✓
Continuing Calibration Data (Form VII VOA)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
d. Raw QC Data	67	105	✓	✓
BFB	73	76	✓	✓
Blank Data	77	97	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	98	105	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Conc.)

CASE NO. 18431 SDG NO. FY403 SDG NOS. TO FOLLOW FY405, FY401
SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	CHECK EPA
Semivolatiles Data				
a. QC Summary	106			
Surrogate Percent Recovery Summary (Form II SV)				
MS/MSD Summary (Form III SV)				
Method Blank Summary (Form IV SV)				
GC/MS Instrument Performance Check (Form V SV)	111	112		
Internal Standard Area and RT Summary (Form VIII SV)	113	114		
b. Sample Data	115	160		
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)				
Reconstructed total ion chromatograms (RIC) for each sample				
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds				
Quantitation reports				
Mass spectra of TICs with three best library matches				
GPC chromatograms (if GPC performed)				
c. Standards Data (All Instruments)	161	203		
Initial Calibration Data (Form VI SV-1, SV-2)				
RICs and Quan Reports for all Standards				
Continuing Calibration Data (Form VII SV-1, SV-2)				
RICs and Quantitation Reports for all Standards				
Semivolatile GPC Calibration Data-UV detector traces				
d. Raw QC Data	204			
DFTPP	205	210		
Blank Data	211	234		
Matrix Spike/Matrix Spike Duplicate Data	235	248		
Pesticides				
a. QC Summary	249	253 LSS 11-3-92		
Surrogate Percent Recovery Summary (Form II PEST)	251			
MS/MSD Duplicate Summary (Form III PEST)	252			
Method Blank Summary (Form IV PEST)	253			

FORM DC-2-2

CASE NO. 5231 SDG NO. FV403 SDG NOS. TO FOLLOW FV401 FV405
SAS NO.

	PAGE NOs FROM	TO	CHECK LAB	CHECK EPA
Pesticides (cont.)				
b. Sample Data	254	260		
TCL Results - Organic Analysis Data Sheet (Form I PEST)			✓	
Chromatograms (Primary Column)			✓	
Chromatograms from second GC column confirmation			✓	
GC Integration report or data system printout			✓	
Manual work sheets			✓	
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)			✓	
c. Standards Data	261	431		
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)			✓	
Initial Calibration of Multicomponent Analytes (Form VI PEST-3)			✓	
Analyte Resolution Summary (Form VI PEST-4)			✓	
Calibration Verification Summary (Form VII PEST-1)			✓	
Calibration Verification Summary (Form VII PEST-2)			✓	
Analytical Sequence (Form VIII PEST)			✓	
Florisil Cartridge Check (Form IX PEST-1)			✓	
Pesticide GPC Calibration (Form IX PEST-2)			✓	
Pesticide Identification Summary for Single Component Analytes (Form X PEST-1)			✓	✓
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)			✓	✓
Chromatograms and data system printouts				
A printout of retention times and corresponding peak areas or peak heights			✓	
Pesticide GPC calibration data - UV detector traces			✓	
d. Raw QC Data	432	471	✓	✓
Blank Data	433	461	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	462	471	✓	

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. 17403 SDG NOS. TO FOLLOW 17401, 17402
SAS NO.

	PAGE NOs FROM	TO	CHECK LAB	EPA
Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	472	~~475~~ 490 LSS 11-3-92		✓
Internal sample and sample extract transfer chain-of-custody records				
Screening records				
All instrument output, including strip charts from screening activities (describe or list)				
Pest. Std. Logs	517	522	✓	✓
Pest. Inject. Logs	500	[illegible]	✓	✓
PA Shipping/Receiving Documents				
Airbills (No. of shipments 1)	496			✓
Chain-of-Custody Records				
Sample Tags	497			✓
Sample Log-In Sheet (Lab & DC1)	498	499	✓	✓
Miscellaneous Shipping/Receiving Records (describe or list)				
Holding Blank	491	495	✓	✓
Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
Other Records (describe or list)				
Telephone Communication Log				

Comments:

Reviewed by: (CSF Lab) [signature] (Signature) L. Shafernich (Printed Name/Title) 11/3/92 (Date)

Reviewed by: (PA) [signature] (Signature) KATHLEEN T. BOUYER [illegible] (Printed Name/Title) 11/10/92 (Date)

FORM DC-2-4

OLM01.7 7/9

COVER SHEET

LAB CODE: CEIMD

CASE #: 14931

SDG #: FY493

SAS # (if applicable): _____

CONTRACT #: 68D20035

(check one)

___ ORGANIC SOW 2/88

X ORGANIC SOW OLM01.0

___ INORGANIC SOW 7/88

___ INORGANIC SOW ILM01.0

___ LOW CONCENTRATION ORGANIC SOW OLC01.0

___ LOW CONCENTRATION INORGANIC SOW ILC01.0

___ HIGH CONCENTRATION ORGANIC SOW 9/88

___ HIGH CONCENTRATION INORGANIC SOW HCIN

THIS DATA PACKAGE CONTAINS:

X RAS data only

___ SAS data only

___ RAS+SAS data

___ regional request/additional data

___ other (please explain below):

_____

Case: 18931
Contract: 68D20035

SDG Narrative
SDG: FY403

Sample Numbers:

FY403

Recra Environmental, Inc. of Columbia, Maryland received from the U.S. EPA a case of samples on October 21, 1992. This sample delivery group contained 1 soil for Full Organic Analysis. These analyses were performed according to instructions in the IFB document for this contract.

Volatile Analysis:

There were no problems with the volatile analyses.

Semivolatile Analysis:

There were no problems with the semivolatile analysis.

Pesticide/PCB Analysis:

There were no problems with the pesticide/PCB analysis.

GC/MS quantitation reports for both samples and/or standards contained within this sample data package often require manual integration of the areas of the quantitation ion for select constituents. When such manual integration is required the quantitation report for said constituents are flagged with an "M". The need for manual integration includes, but is not necessarily limited to, the autoquantitation program's failure to integrate peaks of interest or the failure to correctly integrate said peaks due to poor geometry, peak tailing or peak resolution.

A listing of the quantitation ions used for the GC/MS analyses is included on the following pages.

Please call if you have any questions or other concerns which require clarification.

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 the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Linda Shafernich
Laboratory Manager

11/3/92
Date

RECRA
ENVIRONMENTAL
INC.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Ref. Case No. 18931

Site Name Devils Swamp Ewell

Date: 11-16-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:

ORGANIC: FY-405

The data was found:

(X) Acceptable

( ) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 112-16-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, 6E-HO, Region 6

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Case # 18931
SDG # FY-405
Site Devils Swamp Ewell

Data was found: (X) Acceptable

( ) Provisional

( ) Unacceptable

Action required by TPO: ( ) Yes

(X) No

COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931	SITE Devils Swamp Ewell
LABORATORY RECMD	NO. OF SAMPLES 1
CONTRACT# 68-D2-0035	MATRIX Water
SDG# FY405	REVIEWER (IF NOT ESD) ESAT
SOW# RAS SOW OLM01.8	REVIEWER'S NAME Feng-Chao Kuo
ACCT# 3TFAJN34 SF# TFAUN1	COMPLETION DATE November 13, 1992

SAMPLE NO. FY-405

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORM.	O	O	O	N/A
3. CALIBRATIONS	O	O	O	N/A
4. BLANKS	O	O	O	N/A
5. SURROGATES/SMC	O	O	O	N/A
6. MATRIX SPIKE/DUP	N/A	N/A	N/A	N/A
7. OTHER QC	N/A	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	O	O	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	O	O	O	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS:

AREA OF CONCERN:

NOTABLE PERFORMANCE:

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 18931 SDG: FY405 **SITE** Devils Swamp Ewell **LAB** RECMD

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	1	0	
BNA	1	0	
PEST	1	0	
OTHER	N/A	N/A	

COMMENTS: The case consisted of 1 rinsate sample for complete RAS CLP organics analysis. MS/MSD analyses were not required according to the OTR/COC Record. There were no TCL compounds detected >CRQL in all fractions. Only a low level of the laboratory contaminant, methylene chloride, was reported <CRQL in the VOA fraction. This sample is acceptable for all fractions.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF) and the Evidence Inventory Checklist is attached to this report.

1. **Holding Times** - Acceptable. The sample met contractual and technical holding time criteria.

2. **Tuning/Performance** - Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Internal standard areas and retention time performance met QC guidelines for all fractions. Pest/PCB analyses met instrument performance criteria.

3. **Calibrations** - Acceptable. All compounds generally met contractual calibration criteria for the initial and the continuing calibrations for all fractions.

4. **Blanks** - Acceptable. The method and instrument blanks met contractual criteria. Common laboratory contaminant, methylene chloride, was detected <CRQL in the VOA method blank. The methylene chloride result in sample FY-405 is estimated due to possible laboratory contamination.

5. **System Monitoring Compounds (SMCs)/Surrogates** - Acceptable. All SMCs and surrogate recoveries were within the QC limits.

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 18931 SDG: FY405 **SITE** Devils Swamp Ewell **LAB.** RECMD

COMMENT:

6. Matrix Spike/Matrix Spike Duplicate - Not applicable.

7a. Compound Identity - Acceptable. No TCL compounds were detected >CRQL in any fraction. Methylene chloride was detected <CRQL in the VOA fraction. Sample spectra met identification criteria for the VOA fraction.

7b. Data Completeness - Acceptable. The data package was complete with some deficiencies. The laboratory was contacted for the needed correction and resubmission (see attached FAX Record Log).

8. Case Assessment - The sample is acceptable for all fractions.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18931 SDG No. FY405 SDG Nos. To Follow SAS No. Date Rec 11/04/92

EPA Lab ID: RECMD
Lab Location: 8320 Guilford Rd. Columbia,MD2104
Region: 6 Audit No.: 18931/FY405
Re_Submitted CSF? Yes ____ No X
Box No(s): 1
COMMENTS:

Item No. Comments

3 (a). Form DC-2-1: standard data pages for VOA should end at page 53.

20 (a). The SDG cover sheet was not original.
(b). The airbill was not original.
(c). The Form DC-1 was not original.

* The laboratory was contacted for these deficiencies.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen thanhthien Nguyen	Kathleen Nguyen/Associate Scientist	Date	11/09/92
Audited by: Feng-Chao Kuo	Feng-Chao Kuo/Data Reviewer	Date	11/13/92
Audited by:		Date	
Signature	Printed Name/Title		

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: ____ Date Entered: ____ Date Reviewed: ____

Entered by: ____ ____

Reviewed by: ____ ____

Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713)983-2138

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Linda Shafernich

Firm RECMD

Address 8320 Guilford Road, Bldg. F

City Columbia **State** MD 21046

Telephone (410) 381-2288 **Ext.** _____

Fax Telephone No. (410) 381-2329 **Ext.** _____

Sender:

Name Feng-Chao Kuo

Date November 13, 1992 **Time** _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2138.

MESSAGES: Case:18931 SDG:FY405

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
18931 SDG:FY405

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 13, 1992
Laboratory Name: RECMD
Lab Contact: Linda Shafernich

Region: 6
Regional Contact: Feng-Chao Kuo - ESAT

FAX initiated by: _____Laboratory ___X___Region

In reference to data for the following fractions:

CSF deliverable

Summary of Questions/Issues:

A. CSF deliverable

1. All CSF deliverables must be originals (SOW OLM01.0, B-21, B-21, E.1). If the originals are not available, the location for the originals must be indicated on the submitted copies. Please submit original copies for the following documents or indicate thier locations of them:

   (a). The SDG cover sheet (p. 7).

   (b). The airbill (p. 645).

   (c). The Form DC-1 (p. 648).

2. Form DC-2-1: standard data pages for VOA should end at page 53. Please revise and submit an original copy.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM01.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact RECMD/Linda Shafernich
In Reference To Case No. 18931 **SDG:** FY405

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 14 days** to:

Ms. Christy Macdowell - ESAT
c/o U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2138

Feng-Chiao Kuo
Signature

November 13, 1992
Date

Distribution: (1) Lab Copy,(2) Region Copy,(3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE: 11/23/92 CASE #: 18931

SAS # :

TO: REM/RED SDG # : FY405

C/O J. Jones (6H-MA) LAB : RECMD

FROM: Feng-Chao Kuo - ESAT SITE NAME: Devil Swamp Ewell

Region 6

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response to Region 6 request.

A. CSF deliverable

1. The laboratory was unable to resubmit the original documentation requested, but, indicated where the original documents were located.

2. Use the resubmitted Form DC-2-1.

RECRA ENVIRONMENTAL, INC.

Chemical and Environmental Analysis Services

November 3, 1992

Ms. Meg Jou
USEPA Region VI Laboratory
10625 Fallstone Road
Houston, TX 77099

Re: Analytical Results

Dear Ms. Jou:

Please find enclosed results concerning the analysis of the samples recently submitted.

Pertinent Information:

Matrix:	WATER
Samples Received:	October 21, 1992
Case Number:	18931
SDG Number:	FY405
Job Number:	MD92310

If you have any questions concerning these data, do not hesitate to contact our customer service department at (410) 381-2288.

Sincerely,

Linda S. Shafernich
Laboratory Manager

LSS/acb
Enclosure

I.D. #MD92310
#MD2A4238
#68D20035

8320 Guilford Road, Building F • Columbia, Maryland 21046 • Office: (301) 381-2288 • Fax: (301) 381-2329

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME RECRA Environmental, Inc.
CITY/STATE Columbia, Maryland

CASE NO. 18931 SDG NO. FY405 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

CONTRACT NO. 68D20035
SOW NO. OLM01.

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs FROM	TO	CHECK LAB	EPA
Inventory Sheet (Form DC-2) (Do not number)	N/A	N/A	✓	✓
SDG Case Narrative	1	5	✓	✓
SDG Cover Sheet/Traffic Report	6	7	✓	✓
Volatiles Data				
a. QC Summary	8	14	✓	✓
System Monitoring Compound Summary (Form II VOA)	10	10	✓	✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	N/A	N/A	✓	
Method Blank Summary (Form IV VOA)	11	11	✓	✓
GC/MS Instrument Performance Check (Form V VOA)	12	13	✓	✓
Internal Standard Area and RT Summary (Form VIII VOA)	14	14	✓	✓
b. Sample Data	15	25	✓	
TCL Results - (Form I VOA)			✓	✓
Tentatively Identified Compounds (Form I VOA-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			✓	✓
Quantitation reports			✓	✓
Mass spectra of all reported TICs with three best library matches			✓	
c. Standards Data (All Instruments)	26	54	✓	
Initial Calibration Data (Form VI VOA)			✓	✓
RICs and Quan Reports for all Standards			✓	✓
Continuing Calibration Data (Form VII VOA)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
d. Raw QC Data	55	70	✓	✓
BFB	55	60	✓	✓
Blank Data	61	70	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	N/A	N/A	✓	

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. FY405 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Semivolatiles Data				
a. QC Summary	71	78	✓	✓
Surrogate Percent Recovery Summary (Form II SV)	72	73	✓	
MS/MSD Summary (Form III SV)	N/A	N/A	✓	
Method Blank Summary (Form IV SV)	74	74	✓	
GC/MS Instrument Performance Check (Form V SV)	75	76	✓	✓
Internal Standard Area and RT Summary (Form VIII SV)	77	78	✓	✓
b. Sample Data	79	100		
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds			✓	
Quantitation reports			✓	
Mass spectra of TICs with three best library matches			✓	
GPC chromatograms (if GPC performed)			✓	
c. Standards Data (All Instruments)	101	143	✓	
Initial Calibration Data (Form VI SV-1, SV-2)			✓	✓
RICs and Quan Reports for all Standards			✓	
Continuing Calibration Data (Form VII SV-1, SV-2)			✓	
RICs and Quantitation Reports for all Standards			✓	
Semivolatile GPC Calibration Data-UV detector traces			✓	
d. Raw QC Data	144	166	✓	✓
DFTPP	145	150	✓	
Blank Data	151	166	✓	
Matrix Spike/Matrix Spike Duplicate Data	N/A	N/A	✓	
Pesticides				
a. QC Summary	167	170	✓	✓
Surrogate Percent Recovery Summary (Form II PEST)	169	169	✓	
MS/MSD Duplicate Summary (Form III PEST)	NA	N/A	✓	
Method Blank Summary (Form IV PEST)	170	170	✓	

CASE NO. 18931 SDG NO. FY405 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Pesticides (cont.)				
b. Sample Data	171	176		
TCL Results - Organic Analysis Data Sheet (Form I PEST)			✓	
Chromatograms (Primary Column)			✓	
Chromatograms from second GC column confirmation			✓	
GC Integration report or data system printout			✓	
Manual work sheets			✓	
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)			✓	
c. Standards Data	177	495		
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)			✓	
Initial Calibration of Multicomponent Analytes (Form VI PEST-3)			✓	
Analyte Resolution Summary (Form VI PEST-4)			✓	
Calibration Verification Summary (Form VII PEST-1)			✓	
Calibration Verification Summary (Form VII PEST-2)			✓	
Analytical Sequence (Form VIII PEST)			✓	
Florisil Cartridge Check (Form IX PEST-1)			✓	
Pesticide GPC Calibration (Form IX PEST-2)			✓	
Pesticide Identification Summary for Single Component Analytes (Form X PEST-1)			✓	
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)			✓	
Chromatograms and data system printouts			✓	
A printout of retention times and corresponding peak areas or peak heights			✓	✓
Pesticide GPC calibration data - UV detector traces				
d. Raw QC Data	496	588	✓	✓
Blank Data	497	588	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	N/A	N/A	✓	

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. FY405 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	589	639	✓	✓
Internal sample and sample extract transfer chain-of-custody records	N/A	—	✓	—
Screening records	N/A	—	✓	—
All instrument output, including strip charts from screening activities (describe or list)				
VOA HOLDING BLK	640	644	✓	✓
	—	—	—	—
EPA Shipping/Receiving Documents				
Airbills (No. of shipments 1)	645	645	✓	✓
Chain-of-Custody Records	N/A	N/A	✓	—
Sample Tags	646	646	✓	—
Sample Log-In Sheet (Lab & DCl)	647	648	✓	— ✓
Miscellaneous Shipping/Receiving Records (describe or list)				
MEMORANDUM	649	649	✓	✓
	—	—	—	—
Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
	N/A	—	✓	—
	—	—	—	—
Other Records (describe or list)				
Telephone Communication Log	N/A	—	✓	—
	—	—	—	—
	—	—	—	—

Comments: _____

Sorted by: Amanda M Thomas (Signature) AMANDA M THOMAS (Printed Name/Title) 11/3/92 (Date)
(EPA Lab)

Reviewed by: _____ (Signature) _____ (Printed Name/Title) _____ (Date)
(EPA)

FORM DC-2-4

COVER SHEET

LAB CODE: RECMD

CASE #: 18931

SDG #: FY405

SAS # (if applicable): _____

CONTRACT #: 68D20035

(check one)

___ ORGANIC SOW 2/88

X ORGANIC SOW OLM01.8

___ INORGANIC SOW 7/88

___ INORGANIC SOW ILM01.0

___ LOW CONCENTRATION ORGANIC SOW OLC01.0

___ LOW CONCENTRATION INORGANIC SOW ILC01.0

___ HIGH CONCENTRATION ORGANIC SOW 9/88

___ HIGH CONCENTRATION INORGANIC SOW HCIN

THIS DATA PACKAGE CONTAINS:

X RAS data only

___ SAS data only

___ RAS+SAS data

___ regional request/additional data

___ other (please explain below):

_____

Case: 18931
Contract: 68D20035

SDG Narrative
SDG: FY405

Sample Numbers:

FY405

Recra Environmental, Inc. of Columbia, Maryland received from the U.S. EPA a case of samples on October 21, 1992. This sample delivery group contained 1 water for Full Organic Analysis. These analyses were performed according to instructions in the IFB document for this contract.

Sample FY405 was designated as a field QC sample and did not have enough sample volume to perform QC analyses on.

Volatile Analysis:

The pH of sample FY405 was greater than 1.0.

Semivolatile Analysis:

There were no problems with the semivolatile analysis.

Pesticide/PCB Analysis:

There were no problems with the pesticide/PCB analysis.

GC/MS quantitation reports for both samples and/or standards contained within this sample data package often require manual integration of the areas of the quantitation ion for select constituents. When such manual integration is required the quantitation report for said constituents are flagged with an "M". The need for manual integration includes, but is not necessarily limited to, the autoquantitation program's failure to integrate peaks of interest or the failure to correctly integrate said peaks due to poor geometry, peak tailing or peak resolution.

A listing of the quantitation ions used for the GC/MS analyses is included on the following pages.

Please call if you have any questions or other concerns which require clarification.

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 the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Linda S. Shafernich
Laboratory Manager

11/3/92
Date

RECRA
ENVIRONMENTAL
INC.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Ref. Case No. 18931

Site Name Devil's Swamp Ewell

Date: 11-20-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:				
ORGANIC:	FY-416 TO			
	FY-FY-421			

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 11-20-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, 6E-HO, Region 6

To: Dr. Melvin Ritter , Chemist , Region 6

Attached is the data review summary for Case # 18931
SDG # FY-416
Site Devil's Swamp Ewell

Data was found: ( ) Acceptable

(X) Provisional

( ) Unacceptable

Action required by TPO: (X) Yes

( ) No

COMMENTS:

1- Acetone ,methylene chloride and 2-butanone exceeded technicel %RSD and/or %D calibration criteria.

2- Wrong data reported for BNA initial calibration standard SSTD050.

3- %RPD for three BNA compounds exceeded the QC limits for MS/MSD analyses.

4- Several Pest/PCB surrogate recoveries were <10%.

5- Missing Pest/PCB raw data.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931
LABORATORY RECMD
CONTRACT# 68-D2-0035
SDG# FY416
SOW# RAS SOW OLM01.8
ACCT# 3TFAJN34 SF# TFAUN1

SITE Devils Swamp Ewell
NO. OF SAMPLES 6
MATRIX Soil
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Feng-Chao Kuo
COMPLETION DATE November 20, 1992

SAMPLE NO.				
FY-416	FY-420			
FY-417	FY-421			
FY-418				
FY-419				

DATA ASSESSMENT SUMMARY

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORM.	O	O	X	N/A
3. CALIBRATIONS	M	X	X	N/A
4. BLANKS	O	O	O	N/A
5. SURROGATES/SMC	O	O	M	N/A
6. MATRIX SPIKE/DUP	O	X	O	N/A
7. OTHER QC	N/A	N/A	N/A	N/A
8. INTERNAL STANDARDS	O	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	O	X	M	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	X	M	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: Three VOA compounds exceeded technical calibration criteria. Some Pest/PCB surrogate recoveries were <10% in 3 samples. Two column quantitations differed by >25% for endosulfan I in 3 Pest/PCB samples.

AREA OF CONCERN: The data package arrived 1 day late. Wrong data were submitted for the BNA initial calibration standard SSTD050. Three BNA compounds exceeded %RPD QC limits for MS/MSD analyses. Raw data for the Pest/PCB ending initial calibration analyses, PIBLKG2 and PEMG2, were omitted for the DB-608 column.

NOTABLE PERFORMANCE:

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 18931 SDG: FY416 **SITE** Devils Swamp Ewell **LAB** RECMD

The following is a summary of sample qualifiers used by Region 6 in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA		6	
BNA	6		
PEST	1	5	
OTHER	N/A	N/A	

COMMENTS: The case consisted of 6 soil samples for complete RAS CLP organics analysis. The data package arrived 1 day late for the 14 day contractual turnaround time. All samples were analyzed at low level for all fractions. VOA sample FY-416 and Pest/PCB sample FY-418 required dilutions due to high levels of acetone and endosulfan I, respectively. Three Pest/PCB samples had low (<10%) surrogate recoveries. Methylene chloride, acetone, 2-butanone, and endosulfan I were reported >CRQLs while chlorobenzenes, PAH's, and pesticides were detected <CRQLs in some samples. Data are provisional for all VOA and 5 Pest/PCB samples due to deficiencies in calibration, surrogate recovery, and compound quantitation.

An Evidence Audit was conducted for the Complete Sample Delivery Group File (CSF) and the Evidence Inventory Checklist is attached to this report.

1. **Holding Times** - Acceptable. All samples met contractual holding time criteria.

2. **Tuning/Performance** - Acceptable. BFB and DFTPP analyses met GC/MS tuning criteria. Internal standard areas and retention time performance met QC guidelines for VOA and BNA fractions. The laboratory failed to separate endosulfan sulfate and DDT on one column, but the reviewer verified that the reported results were unaffected. Other Pest/PCB analyses met instrument performance criteria.

3. **Calibrations** - Provisional. All compounds generally met contractual calibration criteria for the initial and the continuing calibrations for all fractions. Acetone, methylene chloride, and 2-butanone exceeded technical %RSD and/or %D calibration criteria. The following results are estimated due to these calibration deficiencies:

ORGANIC QA CHECKLIST
CONTINUATION PAGE

CASE NO. 18931 SDG: FY416 **SITE** Devils Swamp Ewell **LAB.** RECMD

COMMENTS:

3. Calibrations (continued)

all positive acetone and 2-butanone results; and

methylene chloride in samples FY-416DL, FY-417, FY-419, FY-420, and FY-421.

The laboratory submitted wrong data for one BNA initial calibration analysis. Since no BNA compounds were reported >CRQLs and the continuing calibration met QC criteria, sample data were not qualified. Raw data for the ending instrument blank and PEM analysis for the Pest/PCB initial calibration were omitted for one column. Sample data were not qualified because the continuing calibrations that bracketed all Pest/PCB sample analyses met calibration criteria. The laboratory was contacted for submission of the omitted data.

4. Blanks - Acceptable. The method and instrument blanks generally met contractual criteria. Common laboratory contaminants acetone and/or methylene chloride were detected <CRQLs in the VOA method blanks. The methylene chloride results are estimated for samples FY-417, FY-419, and FY-421 due to possible laboratory contamination. Other sample results for the blank contaminants were not qualified because the concentrations exceeded 10X the associated blank levels.

5. System Monitoring Compounds (SMCs)/Surrogates - Provisional. VOA SMC and BNA surrogate recoveries were within the QC limits. The positive results and quantitation limits are estimated for Pest/PCB samples FY-419, FY-420, and FY-421 because all surrogate recoveries were below the advisory QC limits. In the reviewer's opinion, the actual quantitation limits may be much higher for all non-detects in sample FY-421 and for the early eluting analytes in samples FY-419 and FY-420 because the associated surrogate recoveries were <10%. Other Pest/PCB samples generally met QC criteria for surrogate recovery.

6. Matrix Spike/Matrix Spike Duplicate - Acceptable. All MS/MSD recoveries were within the QC limits. The %RPD's for 3 BNA compounds exceeded the QC limits for the MS/MSD analyses. Sample data were unaffected because these compounds were not detected in the unspiked BNA sample.

7a. Compound Identity - Provisional. Methylene chloride, acetone, 2-butanone, and endosulfan I were reported >CRQLs while some chlorobenzenes, PAH's and pesticides were detected <CRQLs in most samples. VOA sample FY-416 was diluted because the acetone concentration exceeded the calibration range.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18931 SDG No. FY416 SDG Nos. To Follow SAS No. Date Rec 11/10/92

EPA Lab ID: RECMD
Lab Location: 8320 Guilford Rd. Columbia,MD2104
Region: 6 Audit No.: 18931/FY416
Re_Submitted CSF? Yes _____ No X
Box No(s): 1
COMMENTS:

Item No.	Comments
4	The cover pages (pages 9, 201, and 594) were not listed on Form DC-2's.
20, 20a	The SDG cover sheet and Form DC-1 were not original.

* The laboratory was contacted for these deficiencies.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen Thanhtuyen Nguyen	Kathleen Nguyen/Associate Scientist	Date	11/18/92
Audited by: Feng-Chao Kuo	Feng-Chao Kuo/Data Reviewer	Date	11/19/92
Audited by:		Date	
Signature	Printed Name/Title		

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713)983-2138

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Linda Shafernich

Firm RECMD

Address 8320 Guilford Road, Bldg. F

City Columbia **State** MD 21046

Telephone (410) 381-2288 **Ext.** _____

Fax Telephone No. (410) 381-2329 **Ext.** _____

Sender:

Name Feng-Chao Kuo

Date November 20, 1992 **Time** _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2138.

MESSAGES: Case:18931 SDG:FY416

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
18931 SDG:FY416

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: November 20, 1992
Laboratory Name: RECMD
Lab Contact: Linda Shafernich

Region: 6
Regional Contact: Feng-Chao Kuo - ESAT

FAX initiated by: _____Laboratory ___X___Region

In reference to data for the following fractions:

CSF deliverable BNA Pest/PCB

Summary of Questions/Issues:

A. CSF deliverable

1. All CSF deliverables must be originals (SOW OLM01.0, B-21, B-21, E.1). If the originals are not available, the location of the originals must be indicated on the submitted copies. Please submit original copies for the following documents or indicate their locations:

   (a). The SDG cover sheet (p. 8), and
   (b). The Form DC-1 (p. 982)

2. All paginated data should be reported on Form DC-2. The cover pages for VOA, BNA and Pesticides (pages 9, 201 and 594) were not listed on DC-2's. Please resubmit a correct original Form DC-2.

B. BNA

1. Sample FY-419: the spectral data for TIC No. 5 were omitted. Please submit.

2. Wrong data were submitted for the initial calibration standard SSTD050 (analysis time 10/30/92, 8:30). Please resubmit pages 513 to 518.

C. Pest/PCB

1. The standard concentration for methoxychlor should be 3.2 ng, not 0.32 ng, in standards INDAHG1 and INDAHH1. Please correct and resubmit pages 707 and 784.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact RECMD/Linda Shafernich
In Reference To Case No. 18931 **SDG:** FY416

C. Pest/PCB (continued)

2. Due to the mislabeling of EPA sample No.'s, raw data for PIBLKG2 (analysis time 10/13/92, 10:35) and PEMG2 (analysis time 10/13/92, 11:05) were substituted with wrong data and were actually omitted in the data package. Please correct the mistakes and submit the correct replacements (p. 710 to p. 713 and p. 849 to 850) with proper pagination.

3. Endosulfan sulfate and DDT coeluted on DB-5 column. Please adjust GC condition to resolve these compounds for future cases.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 (OLM01.0, p. B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items. Region 6 resubmissions may be included with CCS response or sent separately **within 14 days** to:

Ms. Christy Macdowell - ESAT
c/o U.S. EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2138

Feng-Chao Kuo
Signature

November 20, 1992
Date

Distribution: (1) Lab Copy,(2) Region Copy,(3) SMO Copy

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 18931

1. Project Code	Account Code	2. Region No. 6	Sampling Co. PRC	4. Date Shipped 10/23/92	Carrier Fed-X
Regional Information		Sampler (Name) Jeff Myers		Airbill Number 250077 4290	
Non-Superfund Program		Sampler Signature Jeff Myers		5. Ship To Recra Environmental 8320 Guilford Rd., Bldg. F Columbia, MD 21046 ATTN: Tracy Zacheiss (410) 381-2288	
Site Name Devil's Swamp/Ewell		3. Type of Activity: Lead / Pre-Remedial: SF, PRP, ST, FED; PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST			
City, State Scotlandville, La	Site Spill ID				

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
FY416	5	L	G	N	X				6-013987	DS-SS16	10/22/92 1145	PDD	MF2716	—
FY416	|	|	G	|	X			6-013988	|	|	|	|	—
FY416	|	|	C	|		X	X	6-013989	|	|	|	|	—
FY417	|	|	G	|	X			6-013991	DS-SS17	10/22/92 1215	|	MF2717	—
FY417	|	|	G	|	X			6-013992	|	|	|	|	—
FY417	|	|	C	|		X	X	6-013993	|	|	|	|	—
FY418	|	|	G	N	X				6-013995	DS-SS18	10/22/92 1500	|	MF2718	—
FY418	|	|	G	N	X				6-013996	|	|	|	|	—
FY418	|	|	C	|	X	X		6-013997	|	|	|	|	—

Shipment for Case complete? (Y/N)	Page 1 of ___	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Myers	10/23/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
Blue - Re[illegible]opy Pink - SMO Copy White - Lab Copy for Return to Region Yellow - Lab Copy for Return to SMO

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

O3406[illegible]

Org-1

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No.: 18931

1. Project Code: | Account Code:

2. Region No.: 6 | Sampling Co.: PRC

4. Date Shipped: 10/23/92 | Carrier: Fed-X

Regional Information:

Sampler (Name): Jeff Ayers

Airbill Number: 250077429O

Non-Superfund Program:

Sampler Signature: Jeff Ayers

Site Name: Devil's Swamp / Ewell

3. Type of Activity

	Lead	Pre-Remedial	Remedial		Removal	
SF			RIFS		CLEM	
PRP		PA	RD		REMA	
ST		SSI	RA		REM	
FED		LSI	O&M		OIL	
			NPLD		UST	

5. Ship To: Recra Environmental
8320 Guilford Rd, Bldg. F
Columbia, MD 21046

ATTN: Tracy Zacheiss (410) 381-7288

City, State: Scottsdale, La | Site Spill ID:

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY419	5	L	G	N	X				6-014000	DS-SS19	10/22/92 1510	PDD	MFZ719	D
FY419	|	|	G	|	X	|	|	|	6-013999	|	|	|	|	D
FY419	|	|	C	|	|	X	X	|	6-014001	|	|	|	|	D
FY420	|	|	G	|	X	|	|	|	6-014003	DS-SS20	10/22/92 1600	|	MFZ720	—
FY420	|	|	G	|	X	|	|	|	6-014004	|	|	|	|	—
FY420	|	|	C	|	|	X	X	|	6-014005	|	|	|	|	—
FY421	5	L	G	N	X					6-014007	DS-SS21	10/23/92/1315	|	MFZ721	—
FY421	5	L	G	N	X					6-014008	DS-SS21	10/23/92/1315	|	MFZ721	—
FY421	5	L	C	N		X				6-014009	DS-SS21	10/23/92/1315	|	MFZ721	—

Shipment for Case complete? (Y/N): Y

Page 1 of ___

Sample used for a ~~spike and/or~~ duplicate: ~~FY419~~

Additional Sampler Signatures:

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeff Ayers	10/23/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

EPA Form 9110-2 (Rev. 5-91) Replaces EPA Form (2075-7), previous edition which may be used

DISTRIBUTION:
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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

O34062

Org-1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE: 12/19/92 CASE #: 18931

SAS # :

TO: REM/RED SDG # : FY416

C/O J. Jones (6H-MA) LAB : RECMD

FROM: Feng-Chao Kuo - ESAT SITE NAME: Devil Swamp Ewell

Region 6

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response to CCS reports.

A. BNA

1. Use the corrected Forms 5B (p. 206), 6B (505), 6C (p. 506), 7B (p. 537), and 7C (p. 538).

B. Pest/PCB

1. Use the resubmitted Form 1D's, chromatograms, and quantitation reports for the following samples:

   (a) Samples FY-416, FY-417, FY-418, FY-419, FY-420, and FY-421 (p. 600 -640).

   (b) The instrumemt blank and PEM (p. 709A - 723 and p. 849 - 859).

   (c) The method blank, PBLK1 (p. 881 - 885).

   (d) The MS/MSD samples (p. 886 - 901).

RECRA ENVIRONMENTAL, INC.

Chemical and Environmental Analysis Services

November 6, 1992

Ms. Meg Jou
USEPA Region VI Laboratory
10625 Fallstone Road
Houston, TX 77099

Re: Analytical Results

Dear Ms. Jou:

Please find enclosed results concerning the analysis of the samples recently submitted.

Pertinent Information:

Matrix:	SOIL
Samples Received:	October 26, 1992
Case Number:	18931
SDG Number:	FY416
Job Number:	MD92321

If you have any questions concerning these data, do not hesitate to contact our customer service department at (410) 381-2288.

Sincerely,

Linda S. Shafernich
Laboratory Manager

LSS/acb
Enclosure

I.D. #MD92321
#MD2A4238
#68D20035

8320 Guilford Road, Building F • Columbia, Maryland 21046 • Office: (301) 381-2288 • Fax: (301) 381-2329

COVER SHEET

LAB CODE: RECMD

CASE #: 18931

SDG #: FY416

SAS # (if applicable): _____

CONTRACT #: 68D20035

(check one)

___ ORGANIC SOW 2/88

X ORGANIC SOW OLM01.0

___ INORGANIC SOW 7/88

___ INORGANIC SOW ILM01.0

___ LOW CONCENTRATION ORGANIC SOW OLC01.0

___ LOW CONCENTRATION INORGANIC SOW ILC01.0

___ HIGH CONCENTRATION ORGANIC SOW 9/88

___ HIGH CONCENTRATION INORGANIC SOW HCIN

THIS DATA PACKAGE CONTAINS:

X RAS data only

___ SAS data only

___ RAS+SAS data

___ regional request/additional data

___ other (please explain below):

_____

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME RECRA Environmental, Inc.
CITY/STATE Columbia, Maryland

CASE NO. 18931 SDG NO. FY416 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

CONTRACT NO. 68D20035
SOW NO. OLM01.8

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
Inventory Sheet (Form DC-2) (Do not number)	N/A	N/A	✓	
SDG Case Narrative	1	5	✓	✓
SDG Cover Sheet/Traffic Report	6	8	✓	✓
Volatiles Data				
a. QC Summary	10	108	✓	✓
System Monitoring Compound Summary (Form II VOA)	11	11	✓	✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	12	12	✓	✓
Method Blank Summary (Form IV VOA)	13	15	✓	✓
GC/MS Instrument Performance Check (Form V VOA)	16	19	✓	✓
Internal Standard Area and RT Summary (Form VIII VOA)	20	22	✓	✓
b. Sample Data	23	108	✓	
TCL Results - (Form I VOA)			✓	✓
Tentatively Identified Compounds (Form I VOA-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified			✓	✓
Quantitation reports			✓	✓
Mass spectra of all reported TICs with three best library matches			✓	✓
c. Standards Data (All Instruments)	109	148	✓	
Initial Calibration Data (Form VI VOA)			✓	✓
RICs and Quan Reports for all Standards			✓	✓
Continuing Calibration Data (Form VII VOA)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
d. Raw QC Data	149	200	✓	✓
BFB	150	161	✓	✓
Blank Data	162	192	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	193	200	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. FY411 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	CHECK EPA
Semivolatiles Data				
a. QC Summary	202	209	✓	
Surrogate Percent Recovery Summary (Form II SV)	203	203	✓	
MS/MSD Summary (Form III SV)	204	204	✓	
Method Blank Summary (Form IV SV)	205	205	✓	
GC/MS Instrument Performance Check (Form V SV)	206	207	✓	
Internal Standard Area and RT Summary (Form VIII SV)	208	209	✓	✓
b. Sample Data	210	503	✓	
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)			✓	✓
Reconstructed total ion chromatograms (RIC) for each sample			✓	✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds			✓	✓
Quantitation raports			✓	✓
Mass spectra of TICs with three best library matches			✓	✓
GPC chromatograms (if GPC performed)			✓	
c. Standards Data (All Instruments)	504	548	✓	
Initial Calibration Data (Form VI SV-1, SV-2)			✓	✓
RICs and Quan Reports for all Standards			✓	
Continuing Calibration Data (Form VII SV-1, SV-2)			✓	✓
RICs and Quantitation Reports for all Standards			✓	✓
Semivolatile GPC Calibration Data-UV detector traces			✓	✓
d. Raw QC Data	549	593	✓	✓
DFTPP	550	555	✓	
Blank Data	556	579	✓	
Matrix Spike/Matrix Spike Duplicate Data	580	593	✓	✓
Pesticides				
a. QC Summary	595	598	✓	✓
Surrogate Percent Recovery Summary (Form II PEST)	596	596	✓	
MS/MSD Duplicate Summary (Form III PEST)	597	597	✓	
Method Blank Summary (Form IV PEST)	598	598	✓	✓

ORGANICS CONTROLLED SDG FILE (OSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. FY416 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Pesticides (cont.)				
b. Sample Data	599	640		
TCL Results - Organic Analysis Data Sheet (Form I PEST)			✓	
Chromatograms (Primary Column)			✓	
Chromatograms from second GC column confirmation			✓	
GC Integration report or data system printout			✓	✓
Manual work sheets			✓	
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)			✓	
c. Standards Data	641	843		
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)			✓	
Initial Calibration of Multicomponent Analytes (Form VI PEST-3)			✓	✓
Analyte Resolution Summary (Form VI PEST-4)			✓	
Calibration Verification Summary (Form VII PEST-1)			✓	✓
Calibration Verification Summary (Form VII PEST-2)			✓	✓
Analytical Sequence (Form VIII PEST)			✓	
Florisil Cartridge Check (Form IX PEST-1)			✓	✓
Pesticide GPC Calibration (Form IX PEST-2)			✓	✓
Pesticide Identification Summary for Single Component Analytes (Form X PEST-1)			✓	✓
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)			✓	
Chromatograms and data system printouts A printout of retention times and corresponding peak areas or peak heights			✓	✓
Pesticide GPC calibration data - UV detector traces			✓	✓
d. Raw QC Data	844	901	✓	✓
Blank Data	845	885	✓	✓
Matrix Spike/Matrix Spike Duplicate Data	886	901	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18931 SDG NO. FY416 SDG NOS. TO FOLLOW _____
_____ _____ SAS NO. _____

	PAGE NOs FROM	TO	CHECK LAB	EPA
Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	702	911	✓	✓
Internal sample and sample extract transfer chain-of-custody records	N/A	N/A	N/A	N/A
Screening records	912	951	✓	✓
All instrument output, including strip charts from screening activities (describe or list)				
_____				
_____				
PA Shipping/Receiving Documents				
Airbills (No. of shipments 1)	962	962	✓	✓
Chain-of-Custody Records	N/A	N/A	N/A	N/A
Sample Tags	963	980	✓	✓
Sample Log-In Sheet (Lab & DCl)	951	952	✓	✓
Miscellaneous Shipping/Receiving Records (describe or list)				
_____				
_____				
nternal Lab Sample Transfer Records and Tracking Sheets escribe or list)				
_____				
_____				
ther Records (describe or list)				
Telephone Communication Log				
_____				
_____				

omments: _____

ted by: Alexandra Berger (Signature) Alexandra Berger (Printed Name/Title) 11-6-92 (Date)
Lab)

id by: [illegible] KATHLEEN [illegible] (Signature) (Printed Name/Title) (Date)
)

FORM DC-2-4

Case: 18931
Contract: 68D20035

SDG Narrative
SDG: FY416

Sample Numbers:

FY416	FY416DL	FY417	FY418	FY419
FY420	FY421			

Recra Environmental, Inc. of Columbia, Maryland received from the U.S. EPA a case of samples on October 26, 1992. This sample delivery group contained 6 soils for Full Organic Analysis. These analyses were performed according to instructions in the IFB document for this contract.

Volatile Analysis:

Sample FY416 was analyzed at a dilution due to a target compound exceeding the calibration range. Both the diluted and the straight runs are submitted and are billable.

Semivolatile Analysis:

There were no problems with the semivolatile analysis.

Pesticide/PCB Analysis:

Samples FY419, FY419MS, FY419MSD, FY420 and FY421 demonstrated surrogate recoveries below recommended QC limits.

Sample FY418 demonstrated an inflated DCB surrogate recovery on the DB608 column due to coelution with another compound.

Sample FY418 was analyzed at a dilution due to a target compound exceeding the calibration range.

GC/MS quantitation reports for both samples and/or standards contained within this sample data package often require manual integration of the areas of the quantitation ion for select constituents. When such manual integration is required the quantitation report for said constituents are flagged with an "M". The need for manual integration includes, but is not necessarily limited to, the autoquantitation program's failure to integrate peaks of interest or the failure to correctly integrate said peaks due to poor geometry, peak tailing or peak resolution.

A listing of the quantitation ions used for the GC/MS analyses is included on the following pages.

Please call if you have any questions or other concerns which require clarification.

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 the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Linda Shaf

Linda S. Shafernich
Laboratory Manager

11-6-92
Date

RECRA
ENVIRONMENTAL
INC.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devils' Swamp Ewell

Case # 18980

SDG# FY-422

Date : 12-16-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI M.C. Ritter

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC:				
ORGANIC:	FY-422 TO			
	FY-436			
	FY-443			
	FY-444			

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-16-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator , Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devils' Swamp Ewell
Case # 18980
SDG # FY-422

Data was found: ( ) Acceptable

(X) Provisional

( ) Unacceptable

Action required by TPO: (X) Yes

( ) No

COMMENTS:

1- Two VOA samples failed technical holding time criteria.

2- Two VOA and one BNA analytes failed technical calibration criteria.

3- VOA sample with low IS response.

4- BNA analytes failed identification criteria.

5- Outlying Pest/PCB surrogate recovery.

6- 14 days late turnaround time.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18980	SITE Devil's Swamp Ewell
LABORATORY ENCOT	NO. OF SAMPLES 17
CONTRACT# 68-D2-0033	MATRIX 15 Soil/ 2 Water
SDG NO. FY422	REVIEWER (IF NOT ESD) ESAT
SOW# IFB SOW OLM01.8	REVIEWER'S NAME Wallace Doong
ACCT# 3TFAJN46 SF# TFAUN1	COMPLETION DATE December 11, 1992

SAMPLE NO.					
	FY-422	FY-426	FY-430	FY-434	FY-444
	FY-423	FY-427	FY-431	FY-435	
	FY-424	FY-428	FY-432	FY-436	
	FY-425	FY-429	FY-433	FY-443	

DATA ASSESSMENT SUMMARY

	VOA	BNA	Pest/PCB	OTHER
1. HOLDING TIMES	M	O	O	N/A
2. GC/MS TUNE/INSTR. PERFORMANCE	O	O	X	N/A
3. CALIBRATIONS	M	M	O	N/A
4. BLANKS	O	O	O	N/A
5. SMCs/SURROGATES	M	O	X	N/A
6. MATRIX SPIKE/DUPLICATES	X	M	M	N/A
7. DUPLICATES	O	O	O	N/A
8. INTERNAL STANDARDS	M	O	N/A	N/A
9. COMPOUND ID/QUANTITATION	M	M	M	N/A
10. SYSTEM PERFORMANCE	O	O	O	N/A
11. OVERALL ASSESSMENT	M	M	M	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
NA = Not applicable.

ACTION ITEMS: Two VOA samples failed the technical holding time criteria. Two VOA and one BNA analytes failed technical calibration criteria. VOA sample FY-422 had a low internal standard response. BNA and Pest/PCB samples FY-429MS/MSD had outlying MS/MSD recoveries. The laboratory may have over-diluted VOA samples FY-431, FY-432, and FY-433. Several BNA analytes failed identification criteria in BNA samples FY-425 and FY-431. The detection of α-BHC was obscured by matrix interferences in five Pest/PCB samples.

AREA OF CONCERN: Several matrix spike analytes failed retention time criteria in Pest/PCB samples FY-429MS/MSD. The data package was 3 days late for the contractual 14 day turnaround.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18980 **SDG** FY422 **SITE** Devil's Swamp Ewell **LAB** ENCOT

The following is a summary of sample qualifiers used by Region VI in reporting this CLP data:

No.	Acceptable	Provisional	Unacceptable
VOA	6	11	
BNA	11	5	
Pest/PCB	6	10	

COMMENTS: The case consisted of fifteen soil and two water samples for RAS organics analysis. According to OTR/COC Records, sample FY-429 was the designated QC sample, samples FY-426/FY-427 and FY-431/FY-432 are duplicate pairs, sample FY-443 was a equipment rinsate, and sample FY-444 was the trip blank and required only VOA analysis. The data package was three days late for the contractual 14 day turnaround.

VOA: Samples FY-428, FY-431, FY-432, and FY-433 were analyzed at medium levels due to high levels of TCL chlorinated compounds and matrix interferences. Low level analyses were performed for other soil samples. Aromatics, 2-butanone, and the blank contaminants, acetone and methylene chloride, were also reported in some samples. Samples FY-443 and FY-444 failed technical holding time criteria. Samples FY-422 and FY-433 had an outlying internal standard (IS) area or surrogate recovery, but reanalyses were not required.

BNA: Due to high levels of hexachlorobenzene, hexachlorobutadiene, phehenthrene, and bis(2-ethylhexyl)phthalate, medium level samples FY-428, FY-431, FY-432, and FY-433; and low level samples FY-426, FY-427, FY-429, FY-430, and FY-434 were diluted and analyzed. Other chlorinated compounds, PAHs, and common phthalate esters were also reported in some samples.

Pest/PCB: Aroclors 1248, 1254, and 1260 were reported >CRQLs in sample FY-425. No TCL analytes were reported >CRQLs in other samples. Due to dilutions and matrix interferences, nine Pest/PCB samples had outlying surrogate recoveries. Matrix interferences also obscured α-BHC detection in several samples. Four matrix spike compounds were not recovered.

Data are provisional for 11 VOA, 5 BNA, and 10 Pest/PCB samples due to problems with holding time, calibration, internal standard performance, MS/MSD and surrogate recoveries, and compound identification and quantitation.

An evidence audit was conducted for the Complete Sample Delivery Group File (CSF) and the CSF Inventory Checklist is attached to this report.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18980 SDG FY422 SITE Devil's Swamp Ewell LAB ENCOT

COMMENTS:

1. **Holding Times:** Provisional. All samples were extracted and/or analyzed within contractual and technical (40 CFR 136) holding time limits except two VOA water samples. The aromatic results are estimated for VOA samples FY-443 and FY-444 because the samples were analyzed two days past the technical holding time limits.

2. **Tuning/Instrument Performance:** Provisional. The BFB and DFTPP analyses generally met GC/MS tuning criteria. VOA sample FY-422 had a low IS response but a reanalysis was not required because the MS/MSD analyses also had similar problems. Results are estimated and biased low for the TCL analytes associated with IS3 in VOA sample FY-422. BNA sample FY-429MS also had problems with IS response and retention time shift, but sample data were unaffected. The IS areas were within the QC limits for other VOA and BNA samples. Pest/PCB analyses generally met instrument performance criteria.

3. **Calibrations:** Provisional. Target compounds generally met contractual calibration criteria for all fractions. The following results are estimated because the analytes failed technical %RSD or %D calibration criteria:

acetone in VOA samples FY-422, FY-424, FY-425, FY-428, FY-430, and FY-436;

2-butanone in VOA samples FY-422, FY-424, and FY-425; and

bis(2-ethylhexyl)phthalate in BNA samples FY-426, FY-427, and FY-429.

Some BNA results exceeded the calibration range for several BNA MS/MSD analyses, but further dilution was not required. The laboratory failed to submit a contract-required Form VII for two BNA calibrations, but the reviewer verified that the BNA calibrations generally met technical calibration criteria.

4. **Blanks:** Acceptable. Method blanks and/or instrument blanks met QC requirements for all fractions. The common laboratory contaminants, acetone, methylene chloride, di-n-butylphthalate, and bis(2-ethylhexyl)phthalate were reported in the VOA and BNA method blanks. No TCL analytes were reported in the Pest/PCB method blanks. In the reviewer's opinion, all the "B" flagged methylene chloride and di-n-butylphthalate results should be "U" flagged as non-detects because the concentrations were below 5X the associated blank level. All the "B" flagged acetone and bis(2-ethylhexyl)phthalate results may be used after blank level substraction.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18980 **SDG** FY422 **SITE** Devil's Swamp Ewell **LAB** ENCOT

COMMENTS:

5. **System Monitoring Compounds (SMCs)/Surrogates:** Provisional. VOA sample FY-433 had a low SMC recovery, but reanalysis was not required because the MS/MSD analyses had similar problems. Results are estimated for the TCL analytes associated with IS3 in VOA sample FY-433. Due to dilutions and matrix interferences, the surrogates were either diluted out or exceeded the QC limits for nine Pest/PCB samples and their diluted analyses, but sample data were not qualified. The SMC and surrogate recoveries generally met QC guidelines for all BNA samples and other VOA and Pest/PCB samples.

6. **Matrix Spike/Matrix Spike Duplicate:** Provisional. The %RPD and/or MS/MSD recoveries exceeded the QC limits for the following analytes, but sample data were not affected:

1,1-dichloroethene in VOA samples FY-429MS/MSD and FY-433MS/MSD; and

4-chloro-3-methylphenol, 2,4-dinitrotoluene, and 4-nitrophenol in BNA samples FY-429MS/MSD; and

DDT in Pest/PCB samples FY-429MS/MSD.

Results are estimated for 1,4-dichlorobenzene and 1,2,4-trichlorobenzne in BNA sample FY-429 because the MS/MSD recoveries and/or %RPDs exceeded the QC limits. The MS/MSD recoveries also exceeded QC limits for heptachlor, aldrin, endrin, and γ-BHC but the peaks failed retention time identification criteria. In the reviewer's opinion, the reported MS/MSD results were false positives for these 4 analytes. The non-detect results are therefore unusable for heptachlor, aldrin, endrin, and γ-BHC for Pest/PCB sample FY-429. False negatives are possible and the actual quantitation limits may be much higher than the reported values. The same qualifications should also apply to samples FY-426, FY-427, FY-428, FY-430, FY-431DL, FY-432DL, FY-433DL, and FY-434DL due to similarity in sample matrix pattern. Other matrix spike compounds met precision and accuracy criteria for all fractions.

7. **Compound Identity/Quantitation:** Provisional. Duplicate samples had consistent results.

VOA: Samples FY-428, FY-431, FY-432, and FY-433 were analyzed at medium levels due to high levels of chlorinated TCL compounds and matrix interferences. Low level analyses were performed for other soil samples. Aromatics, 2-butanone, methylene chloride, and acetone were also reported in some samples. The quantitation limits are estimated for samples FY-431, FY-432, and FY-433 because the laboratory may have over-diluted the samples. Sample spectra generally met identification criteria.

COMMENTS/CLARIFICATIONS
REGION VI CLP QA REVIEW

CASE 18980 **SDG** FY422 **SITE** Devil's Swamp Ewell **LAB** ENCOT

COMMENTS:

7. Compound Identity/Quantitation:

BNA: Hexachlorobenzene, hexachlorobutadiene, phehenthrene, and bis(2-ethylhexyl)phthalate were reported in samples FY-426, FY-427, FY-428, FY-429, FY-430, FY-431, FY-432, FY-433, and FY-434. Other chlorinated compounds, PAHs, and common phthalate esters were also reported in some samples. The identifications are tentative and results are estimated for benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample FY-425 and benzo(a)anthracene in sample FY-431 because the analytes failed spectral identification criteria. Other sample spectra generally met identification criteria.

Pest/PCB: Nine samples were diluted and analyzed due to high levels of matrix interferences. Aroclors 1248, 1254, and 1260 were reported >CRQLs in sample FY-425. No TCL analytes were reported >CRQLs in other samples. In the reviewer's opinion, only the diluted data should be used for samples FY-431, FY-432, FY-433, and FY-434 due to major matrix interferences in the original analyses. The reported quantitation limits are estimated for α-BHC in samples FY-426, FY-427, FY-428, FY-429, and FY-430 because matrix interferences obscured this analyte detection. In the opinion of this reviewer, the α-BHC result should be taken from the diluted analyses for samples FY-426, FY-427, and FY-428. The AR1254 result is estimated in sample FY-425 because the quantitation peaks coeluted with AR1248 and AR1260 peaks.

8. Data completeness: Acceptable. The data package was complete except for some needed clarifications and corrections. The laboratory was notified of the needed resubmissions (see attached FAX Record Log).

9. Case Assessment: Data are acceptable for 6 VOA, 11 BNA, and 6 Pest/PCB samples.

VOA Data are provisional for samples FY-422, FY-424, FY-425, FY-428, FY-430, FY-431, FY-432, FY-433, FY-436, FY-443, and FY-444 due to problems with holding time, calibration, internal standard performance, surrogate recovery, and compound quantitation.

BNA Data are provisional for samples FY-425, FY-426, FY-427, FY-429, and FY-431 due to problems with calibration, MS/MSD recovery, and compound identification.

Pest/PCB Data are provisional for samples FY-425, FY-426, FY-427, FY-428, FY-429, FY-430, FY-431, FY-432, FY-433, and FY-434 due to problems with MS/MSD recovery and compound identification and quantitation.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18980 SDG No. FY422 SDG Nos. To Follow SAS No. Date Rec 11/16/92

EPA Lab ID: Environmental Control Tech. Corp. (ENCOT)
Lab Location: 3985 Research Park, Ann Arbor, MI 48108
Region: 6 Audit No.: 18980/FY422
Re_Submitted CSF? Yes _____ No X
Box No(s): 1
COMMENTS:

3. The reviewer corrected the number scheme on Form DC-2 for Pesticide Matrix Spike data (p.2923 to p.2938).

20. The SDG Cover Sheet is not the original. The laboratory was contacted for the location of the original.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?		X	

Audited by: Kathleen Thanh Thien Nguyen K. T. Nguyen/Scientist Associate Date 12/03/92
Audited by: _____ _____ Date _____
Audited by: _____ _____ Date _____
Signiture Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
Entered by: _____ _____
Reviewed by: _____ _____
Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 Tel:(713)983-2136

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Thomas H. Marshall

Firm ENCOT

Address 3985 Research Park Dr.

City Ann Arbor **State** MI 48108

Telephone (313) 761-1389 **Ext.** _____

Fax Telephone No. (313) 761-1034 **Ext.** _____

Sender:

Name Wallace Doong

Date December 16, 1992 **Time** _____

Total Number of pages including this Cover Sheet 3

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2136.

MESSAGES: Case:18980 SDG:FY422 File:O-943

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case No(s):
Case:18980 SDG:FY422

REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX:	December 16, 1992
Laboratory Name:	ENCOT
Lab Contact:	Thomas H. Marshall
Region:	6
Regional Contact:	Wallace Doong - ESAT
FAX initiated by:	Laboratory X Region

In reference to data for the following fractions:

CSF Deliverables VOA BNA

Summary of Questions/Issues:

A. CSF Deliverables:

1. The SDG Cover Sheet is not the original (page 3074). Please indicate the location of the original copy.

B. VOA:

1. Samples FY-431 and FY-432: The dilution factor chosen did not keep the response of the largest analyte peak for a target compound in the upper half of the initial calibration range of the instrument (OLM01.2, D-47/VOA, 10.7.2). Please explain.

2. Sample FY-433 was analyzed at medium level, but no TCL analytes were detected >CRQLs and no apparent matrix interference was observed in the analysis. Please justify the dilution.

3. Internal standards and surrogates should be labeled on the standard chromatograms for initial and continuing calibrations (OLM01.0, B-12, c.1.a & c.2.a). Please label and resubmit the standard chromatograms.

C. BNA:

1. Sample FY-427DL: The dilution factor chosen did not keep the response of the largest analyte peak for a target compound in the upper half of the initial calibration range of the instrument (OLM01.2, D-47/VOA, 10.7.2). Please explain.

FAX COMMUNICATION LOG

Continuation Page 2
Laboratory/Contact ENCOT / Thomas H. Marshall
In Reference To Case No. 18980 **SDG:** FY422

Summary of Questions/Issues:

C. BNA (continued):

2. Sample FY-443: The quantitation area was not legible for 2-fluorobiphenyl. Please resubmit page 2253.

3. Internal standards and surrogates should be labeled on the standard chromatograms for initial and continuing calibrations (OLM01.0, B-16, c.1.a & c.2.a). Please label and resubmit the standard chromatograms.

4. The analytes failed spectral identification criteria for benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample FY-425 and benzo(a)anthracene in sample FY-431 (OLM01.3, D-50 & D-51/SV, 7.1.3). Please review the sample spectra and resubmit better background reduced spectra or Forms 1 (pages 797 and 1704) if the analytes still fail identification criteria.

5. A contract-required Form VII (OLM01.0, D-49/SV, 5.10) was omitted for two initial calibrations (11/3/92 and 11/5/92). Please submit.

Note: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new Form DC-2 (OLM01.0, p.B-22), except those containing only replacement pages. Custody seals are required for all CSF resubmission shipments.

Please respond to the above items **within 14 days** to:

Ms. Christy Macdowell - ESAT
US EPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099

If you have any questions, please contact me at (713) 983-2136 or Ms. Christy Macdowell at (713) 983-2137.

Wallace Doong
Signature

December 16, 1992
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

RESUBMITTED DATA REVIEW REPORT

DATE: 02/25/93 CASE #: 18980

SAS #:

TO: c/o J. Jones (6H-MA) SDG #: FY422

LAB : ENCOT

FROM: Wallace Doong - ManTech SITE : Devil's Swamp Ewell

Region 6 PAGE: 1 of 2

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

Laboratory response to CCS Report:

A. BNA

1. Sample FY-435: Use the resubmitted raw data (pages 2097 to 2175).

2. Please use the resubmitted raw data for the calibration standards (pages 2306-2365).

Laboratory response to Region 6 request:

A. CSF Deliverables

1. According to the laboratory, the original copy of the SDG Cover Sheet was sent to SMO. Please use the resubmitted page 3074 with the information of the original copy location.

B. VOA

1. Samples FY-431 and FY-432: The laboratory admitted that the dilution factor chosen did not keep the response of the largest TCL analyte peak in the upper half of the initial calibration range of the instrument. This response does not affect the original data review.

2. Sample FY-433: This response does not affect the original data review.

3. Please use the resubmitted chromatograms for the calibration standards (pages 345-451).

RESUBMITTED DATA REVIEW REPORT
CONTINUATION PAGE

Laboratory response to Region 6 request:

C. BNA

1. Samples FY-427DL: The laboratory admitted that the dilution factor chosen did not keep the response of the largest TCL analyte peak in the upper half of the initial calibration range of the instrument. This response does not affect the original data review.

2. Sample FY-443: Please use the resubmitted page 2253.

3. Please use the resubmitted chromatograms for the calibration standards (pages 2276-2392).

4. In the reviewer's opinion, the following analytes failed identification criteria: benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample FY-425 and benzo(a)anthracene in sample FY-431. This response does not affect the original data review.

5. The laboratory argued that a Form VII was not required for the initial calibrations. This response does not affect the original data review.

EPA United States Environmental Protection Agency
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PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 18980 ~~18931~~

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/~~29~~ 26/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 5266126110

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: ENCOTEC
3985 RESEARCH TRIANGLE PK. DR.
ANN ARBOR, MI 48108
(313)761-1389
ATTN: SCOTT DEVORE

Site Name: DEVIL'S SWAMP / EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI [X]; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY422	5	L	G	N	X				6-014011	DS-SS 22	10/26/92/0930	PDD	MFZ722	—
FY422	5	L	G	↓	X				6-014012	↓	↓	PDD	↓	—
FY422	5	L	C	↓		X	X		6-014013	↓	↓	PDD	↓	—
FY423	5	L	G	↓	X				6-014015	DS-SS-23	10/26/92/1015	PDD	MFZ723	—
FY423	5	L	G	↓	X				6-014016	↓	↓	PDD	↓	—
FY423	5	L	C	↓		X	X		6-014017	↓	↓	PDD	↓	—
FY424	5	L	G	↓	X				6-014019	DS-SS-24	10/26/92/1115	PDD	MFZ724	—
FY424	5	L	G	↓	X				6-014020	↓	↓	PDD	↓	—
FY424	5	L	C	↓		X	X		6-014021	↓	↓	PDD	↓	—

Shipment for Case complete? (Y/N): N

Page 1 of 2

Sample used for a ~~spike~~ and/or ~~duplicate~~: N/A

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/26/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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C[illegible] [illegible]n to SMO

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EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

(For Organic CLP Analysis)

SAS No. (if applicable):

Case No. 18980 ~~18931~~

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/26/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 526126110

Non-Superfund Program

Sampler Signature:

5. Ship To:
ENCOTEC
3985 RESEARCH TRI. PARK DR.
ANN ARBOR, MI 48108
(313) 761-1389
ATTN: SCOTT DEVORE

Site Name: DEVIL'S SWAMP / EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID:

3. Type of Activity

	Used	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY425	5	L	G	N	X				6-014023	DS-5525	10/23/92/1230	PDD	MF2725	—
FY425	↓	↓	G	↓	X				6-014024	↓	↓	PDD	↓	—
FY425	↓	↓	C	↓		X	X		6-014025	↓	↓	PDD	↓	—

Shipment for Case complete? (Y/N): N

Page 2 of 2

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: for PDD

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/26/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (If applicable)

Case No. 18980

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/28/92	Fed-X

Regional Information

Sampler (Name): Jeff Ayers

Airbill Number: 2500774312

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: Encotec, 3985 Research Triangle Park Dr., Ann Arbor, MI 48108

ATTN: Scott Devore (313) 761-1389

Site Name: Devil's Swamp / Ewell

City, State: Scotlandville, La

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI X; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY426	5	L	G	N	X				6-014027	DS-SS26	10/27/92 0930	PDD	MFZ726	—
FY426			G		X				6-014028					—
FY426			C			X	X		6-014029					—
FY427			G		X				6-014031	DS-SS27	10/27/92 0930		MFZ727	D JV ~~(SS26)~~ (FY426
FY427			G		X				6-014032					D JV ~~(SS26)~~ (FY426
FY427			C			X	X		6-014033					D JV ~~(SS26)~~ ~~(FY48~~
FY428			G		X				6-014035	DS-SS28	10/27/92 1100		MFZ728	— JV (FY426
FY428			G		X				6-014036					—
FY428			C			X	X		6-014037					—

Shipment for Case complete? (Y/N) Y

Page 1 of 3

Sample used for a spike and/or duplicate: —

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/28/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 18980

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/28/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 250077431 2

Non-Superfund Program

Sampler Signature: [signature] for JTA

5. Ship To: ENCOTEC
3985 RESEARCH TRIANGLE PK. DR
ANN ARBOR, MI 48108
(313) 761-1389
ATTN: SCOTT DEVORE

Site Name: DEVIL'S SWAMP / EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/ PCB	High only: ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
FY429	5	L	G	N	X				6-014039	DS-SS29	10/27/92/1330	PDD	MFZ729	S FR
FY429			G		X				6-014040					S FR
FY429			C			X	X		6-014041					S FR
FY430			G		X				6-014043	DS-SS30	10/27/92/1430	PDD	MFZ730	—
FY430			G		X				6-014044					—
FY430			C			X	X		6-014045					—
FY431			G		X				6-014047	DS-SS-31	10/27/92/1530		MFZ731	—
FY431			G		X				6-014048					—
FY431			C			X	X		6-014049					—

Shipment for Case complete? (Y/N)

Page 1/2 of 3

Sample used for a spike and/or duplicate: FY429

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/28/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (If applicable)

Case No. 18980

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/28/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 2500774312

Non-Superfund Program

Sampler Signature: [signature] for JTA

Site Name: DEVIL'S SWAMP/EWELL

City, State

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI [X]; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

5. Ship To: ENCOTEC
3985 RESEARCH TRIANGLE PK. DR.
ANN ARBOR, MI 48108
(313) 761-1389
ATTN: SCOTT DEVORE

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. $NaHSO_4$
4. H_2SO_4
5. Other (Specify)
6. Ice only
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY432	5	L	G	N	X				6-014051	DS-SS32	10/27/92/1610	PDD	MFZ732	JV D (~~SS31~~) (FY43
FY432	↓	↓	G	↓	X				6-014052	↓	↓	↓	↓	JV D (~~SS31~~) (FY43
FY432	↓	↓	C	↓		X	X		6-014053	↓	↓	↓	↓	JV D (SS31) (FY4
FY433	↓	↓	G	↓	X				6-014055	DS-SS33	10/27/92/1630	↓	MFZ733	—
FY433	↓	↓	G	↓	X				6-014056	↓	↓	↓	↓	—
FY433	↓	↓	C	↓		X	X		6-014057	↓	↓	↓	↓	—
FY444	4	L	G	N	X				6-014270,271	DS-TB01	10/28/92/1635	LV	—	B
FY443	4	L	G	N	X				6-014265,266	DS-ER02	10/28/92/1615	LV	MFZ743	~~JV~~ B
FY443	4	L	G	N		X	X		6-014267,268	DS-ER02	10/28/92/1615	LV	MFZ743	~~JV~~ B

Shipment for Case complete? (Y/N) Y

Page ~~1~~ 3 of 3

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: [signature]

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/28/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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Organic Traffic Report & Chain of Custody Record

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 18980

1. Project Code	Account Code	2. Region No. 6	Sampling Co. PRC	4. Date Shipped 10/29/92	Carrier FEDEX
Regional Information		Sampler (Name) LUIS VEGA		Airbill Number 526612633 1	
Non-Superfund Program		Sampler Signature Luis Vega		5. Ship To ENCOTEC 3985 RESEARCH TRIANGLE PK.DR. ANN ARBOR, MI 48108 (313) 761-1389 ATTN: SCOTT DEVORE	
Site Name DEVIL'S SWAMP/EWELL		3. Type of Activity (Lead / Pre-Remedial / Remedial / Removal) SF PA RIFS CLEM; PRP PA RD REMA; ST SSI RA REM; FED LSI O&M OIL; NPLD UST			
City, State SCOTLANDVILLE, LA	Site Spill ID				

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. $NaHSO_4$ 4. H_2SO_4 5. Other (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E RAS Analysis VOA	E BNA	E Pest/ PCB	E High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
FY434	5	L	G	N	X				6-014059	DS-SS34	10/28/92/1025	PDD	MFZ734	—
FY434			G		X				6-014060					—
FY434			C			X	X		6-014061					—
FY435			G		X				6-014063	DS-SS35	1110		MFZ735	—
FY435			G		X				6-014064					—
FY435			C			X	X		6-014065					—
FY436			G		X				6-014067	DS-SS36	1200		MFZ736	—
FY436			G		X				6-014068					—
FY436			C			X	X		6-014069					—

Shipment for Case complete? (Y/N) YES

Page 1 of 1

Sample used for a spike and/or duplicate

Additional Sampler Signatures: Luis Vega for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Luis Vega	10/29/92 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Org-1

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME ENSYS
CITY STATE Ann Arbor MI
CASE NO. 13990 SDG NO. FY433 SDG NOS. TO FOLLOW N/A
N.A. N.A. SAS NO. N.A.
CONTRACT NO. 68-D2-0033
SOW NO. OLM01.8

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B. SECTION II and SECTION III.)

	PAGE NOs FROM	PAGE NOs TO	CHECK LAB	CHECK EPA
1 INVENTORY SHEET (Form DC-2) (Do not number)	N.A.	N.A.	Thm 11/13/91	
2 SDG CASE NARRATIVE	1	6		✓
3 TRAFFIC REPORT	7	12		✓
4 VOLATILES DATA				
a. QC Summary				
System Monitoring Compound Summary (Form II VOA)	13	16		✓
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	17	20		✓
Method Blank Summary (Form IV VOA)	21	27		✓
GC/MS Instrument Performance Check (Form V VOA)	28	34		✓
Internal Standard Area and RT Summary (Form VIII VOA)	35	40		✓
b. Sample Data	41	338		✓
TCL Results - (Form I VOA)				✓
Tentatively Identified Compounds (Form I VOA-TIC)				✓
Reconstructed total ion chromatograms (RIC) for each sample or sample extract				✓
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified				✓
Mass spectra of all reported TICs with three best library matches				✓
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI VOA)	339	344		✓
RICs and Quan Reports for all Standards	345	444		✓
Continuing Calibration (Form VII VOA)	445	446		✓
RICs and Quan Reports for all Standards	447	454		✓
d. Raw QC Data				
BFB	455	476		✓
Blank Data	477	512		✓
Matrix Spike Data	519	530		✓
Matrix Spike Duplicate Data	531	542	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO 13780 SDG NO. 51422 SDG NOS. TO FOLLOW N/A
N.A. N.A. SAS NO N.A.

	PAGE NOs FORM	TO	CHECK LAB	EA
5 Semivolatiles Data				
a. QC Summary				
Surrogate Percent Recovery Summary (Form II SV)	543	546	TMM 11/13/92	✓
MS/MSD Summary (Form III SV)	547	549		
Method Blank Summary (Form IV SV)	550	554		
GC/MS Instrument Performance Check (Form V SV)	555	561		
Internal Standard Area and RT Summary (Form VIII SV)	562	573		
b. Sample Data	574	2268		✓
TCL Results (Form I SV-1, SV-2)				
Tentatively Identified Compounds (Form I SV-TIC)				✓
Reconstructed total ion chromatograms (RIC) for each sample, sample extract, standard blank, and spiked sample				
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds				✓
Mass spectra of TICs with three best library matches				
GPC chromatograms (if GPC performed)				✓
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI SV-1, SV-2)	2269	2275		✓
RICs and Quan Reports for all Standards	2276	2365		✓
Continuing Calibration (Form VII SV-1, SV-2)	2366	2373		✓
RICs and Quan Reports for all Standards	2374	2397		✓
Semivolatiles GPC Calibration Data-UV detector traces	2398	N.A.		✓
d. Raw QC Data				
DFTPP	2399	2420		✓
Blank Data	2421	2500		✓
Matrix Spike Data	2501	2515		✓
Matrix Spike Duplicate Data	2516	2530		✓
6 Pesticides				
a. QC Summary	N.A.	N.A.		
Surrogate Percent Recovery Summary (Form II PEST)	2531	2533		✓
MS/MSD Duplicate Summary (Form III PEST)	2534	2539		✓
Method Blank Summary (Form IV PEST)	2536	2540	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. 18380 SDG NO EY420 SDG NOS. TO FOLLOW NA
N.A. N.A. SASNO N.A.

	PAGE NOs FROM	TO	CHECK LAB	EPA
6 Pesticides (cont.)				
b. Sample Data	2541	2716	Tam 11/13/92	✓
TCL Results - Organic Analysis Data Sheet (Form I PEST)				✓
Chromatograms (Primary Column)				✓
Chromatograms from second GC column confirmation				✓
GC integration report or data system printout				✓
Manual work sheets				✓
For pesticides/Aroclors confirmed by GC/MS, copies of raw spectra and copies of background-subtracted mass spectra of target compounds (samples & standards)				N A
c. Standards Data				
Initial Calibration of Single Component Analytes (Form VI PEST-1 and PEST-2)	2717	2721		✓
Initial Calibration of Multicomponent Analytes (Form VIII. PEST-3)	2722	2723		✓
Analyte Resolution Summary (Form VI PEST-4)	2724	N.A.		✓
Calibration Verification Summary (Form VII PEST-1)	2725	2730		✓
Calibration Verification Summary (Form VII PEST-2)	2731	2734		✓
Analytical Sequence (Form VIII PEST)	2735	2738		✓
Florisil Cartridge Check (Form IX PEST-1)	2739	2740		✓
Pesticide GPC Calibration (Form IX PEST-2)	2741	2742		✓
Pesticide Identification Summary for Single Component Analytes (Form X PEST-1)	2743	2746		✓
Pesticide Identification Summary for Multicomponent Analytes (Form X PEST-2)	2747	N.A.		✓
Chromatograms and data system printouts	2748	2852		✓
A print of retention times and corresponding peak areas or peak heights } together	N.A.	N.A.		
Pesticide GPC calibration data - UV detector traces	2853	N.A.		✓
d. Raw QC Data				
Blank Data	2854	2906		✓
Matrix Spike Data	2907	2922		✓
Matrix Spike Duplicate Data	2923	2929	✓	✓

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASE NO. [illegible] SDG NO. [illegible] SDG NOS. TO FOLLOW NA
N.A. N.A. SASNO N.A.

	PAGE NOs FROM	TO	CHECK LAB	EPA
7 Miscellaneous Data				
Original preparation and analysis forms or copies of preparation and analysis logbook pages	2930	2967	T Hun 11/13/92	
Internal sample and sample extract transfer chain-of-custody records	2968	N.A		
Screening records	2969	3012		
All instrument output, including strip charts from screening activities (describe or list)	N.A.	N.A		
Diagnostic reports	3013	3021		
	N.A.	N.A.		—
8 EPA Shipping/Receiving Documents				
Airbill (No. of shipments 3)	3022	3025		✓
Chain-of-custody Records	3026	3037		
Sample Tags	3038	3066		✓
Sample Log-in Sheet (Lab & DC1)	3067	3073		✓
SDG Cover Sheet	3074	N.A.		✓
Miscellaneous Shipping/Receiving Records (describe or list)				
Misc. Login	3075	3080		✓
	N.A.	N.A.		—
9 Internal Lab Sample Transfer Records and Tracking Sheets (describe or list)				
	N.A.	N.A.		NA
	↓	↓		↓
10 Other Records (describe or list)				
Telephone Communication Log	3081	3082		✓
	N.A	N.A		NA
	↓	↓	↓	↓

11 Comments: N.A. = Not Applicable

Completed by: (CLP Lab) [signature] (Signature) ~~CLP~~ Thomas H Marshall / CLP Proj Man. (Printed Name/Title) 11/13/92 (Date)

Audited by: (EPA) [signature] (Signature) KATHLEEN T. [illegible] / [illegible] ASSOCIATE (Printed Name/Title) [illegible] (Date)

Form DC-2-4

ENVIRONMENTAL
CONTROL
TECHNOLOGY
CORPORATION

3983 RESEARCH PARK DRIVE
ANN ARBOR, MICHIGAN 48108
313 761-1389

November 13, 1992

Ms. Linda Boynton
U.S. EPA Contract Laboratory Program
Sample Management Office
300 N. Lee St.
Suite 200
Alexandria, VA 22314

RE: Case 18980 Diskette and Data Package Deliverable

Dear Linda,

Please find the enclosed diskette and data package deliverable for Case 18980. Additional copies of the data package are being sent to EMSL-LV and Region VI.

If you have any questions about this or any other matter, please feel free to contact me.

Very truly yours,

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION

Thomas H. Marshall

Thomás H. Marshall
CLP Project Manager

THM/qos

Enclosure

cc: EMSL-LV
Region VI

#75102

NARRATIVE

Case 18980

A total of seventeen samples were received by ENCOTEC on October 24, 1992 through October 30, 1992, and were scheduled for Organics Analysis under Contract #68-D2-0033, first bid lot. Please refer to the following table for vital information that pertains to this case.

Table 1.0

SDG #: FY422

	SAMPLE ANALYZED			
	Actual Samples	QC Samples	Re-Run Samples	Total Billable Analyses
Volatile Analyses	17	6	0	23
Semivolatile Analyses	16	6	9	31
Pesticide/PCB Analyses	16	4	0	20

Total Billable Analyses: 20 Full + 3VOA + 11 BNA

This Deliverables Package is assembled in accordance with instructions in Section B, OLM01.8 revision of the Contract Laboratory Program - Statement of Work. A copy of this deliverable has been distributed to Region VI, the Sample Management Office (SMO) and EMSL-LV. In addition a sample Summary Data Package has been sent to SMO and a copy of the complete CSF File has been sent to Region VI.

The following is a detailed description of quality control, shipment, and/or analytical problems that were encountered in the processing of these samples.

18980 SAMPLE CUSTODY

SDG# FY422

ENCOTEC received seventeen samples from Federal Express on October 27, 1992 through October 30, 1992 without incident. Standard Chain of Custody procedures were followed. The samples were stored at 4°C and/or chemically preserved as required by EPA protocol. The samples were scheduled for full organic analysis.

18980 VOLATILES

SDG# FY422

Volatile sample analysis proceeded without any difficulties. Sample analysis took place on October 27, 1992 through November 6, 1992.

The method blank analysis revealed two Target Compounds as blank contaminants Acetone (CAS# 67-64-1) and Methylene Chloride (CAS# 75-09-2). These analytes were quantitated at concentrations less than Contract Required Quantitation Limits (CRQL). One "Unknown" Tentatively Identified Compound (TIC) was detected in method blank "VBLKZ3". This TIC was also quantitated at a relatively low concentration.

Sample analysis revealed multiple positive hits from the Target Compound List. The positively detected compounds were quantitated at various concentration levels. Several Tentatively Identified Compound were also detected in the samples.

QA/QC results were very good. Surrogate recoveries revealed 4 out of 96 outside of the required percent recovery limits. MS/MSD analysis revealed 1 out of 15 Relative Percent Differences (RPD) and 0 out of 30 recoveries outside of advisory QA/QC windows. All except seven EICP standard areas were within contract required windows. Those samples that exhibited QA/QC outliers were reanalyzed to verify matrix interferences. The reanalyzed samples confirmed the matrix interferences by producing similar outliers. Please see the Sample Data Package for all details.

18980 EXTRACTIONS

SDG# FY422

Sample FY443 was extracted by separatory funnel for Pesticide/PCB's on October 30, 1992 and by continuous liquid-liquid extraction for Semivolatiles on October 29, 1992. All extracts were processed according to CLP protocol with one exception. The MS/MSD of sample FY443 were extracted with only 500 mL due to limited sample volume. Sample Management Office was contacted regarding this matter. Please see telephone log in section ten of the deliverables. Final extracts were given to the GC group on November 2, 1992 and to the GC/MS group on October 30, 1992 for analysis.

Soil samples were extracted by means of sonication for Pesticide/PCB's and Semivolatiles on October 27 through October 30, 1992. All soil samples were screened by GC(FID). Soil samples FY428, FY431, FY432, and FY433 were determined to be medium level samples. These samples were extracted medium level on October 31, 1992. All soil extracts were processed according to CLP protocol with one incident. Soil sample FY431 evaporated significantly during GPC collection October 30, 1992 and was re-extracted on November 2, 1992. Final extracts were given to the GC group on November 3, 1992 and to the GC/MS group on November 2, 1992 for analysis.

18980 SEMIVOLATILES

SDG# FY422

Semivolatile analysis proceeded without many difficulties. Sample analysis took place on October 30, 1992 through November 8, 1992.

Method blank analysis revealed only two positively identified Target Compounds. Di-n-Butylphthalate CAS# 84-74-2 and bis(2-Ethylhexyl)phthalate CAS# 117-81-7 were detected at concentrations less than the Contract Required Quantitation Limit (CRQL). Several Tentatively Identified Compounds were also detected in the method blanks at relatively low concentrations.

Sample analysis revealed several positive hits from the Target

Compound List. Multiple Tentatively Identified Compounds were also found in the samples. Several samples required reanalysis to at a secondary dilution due to high levels of various Target Compounds.

The QA/QC results were very good. Surrogate recoveries revealed only 2 out of 240 outside of the required QA/QC limits. MS/MSD analysis revealed 2 out of 33 Relative Percent Differences and 7 out of 66 recoveries outside of advisory QA/QC windows. The MS/MSD recovery outliers were attributed to combination of both matrix interferences and high levels of organic contaminants. One sample exhibited EICP internal standard areas outside of required QA/QC limits. This sample was reanalyzed to verify matrix interferences. The reanalyzed sample did not reveal similar EICP outliers. The sample was not analyzed again since it was a matrix spike. Please see the Sample Data Package for complete details.

18980 PESTICIDES

SDG# FY422

Pesticide/PCB analysis proceeded without many difficulties. Sample analysis took place on November 3, 1992 through November 5, 1992.

Method blank analysis did not reveal any positively identified Target Compounds.

Analysis did reveal and positively detected single or multicomponent Targets.

QA/QC results were poor. Surrogate recoveries revealed 28 out of 80 outliers outside advisory QA/QC windows. Sample interferences caused the baseline to rise in the chromatograms. This problem contributed to high DCB and TCX recoveries. MS/MSD analysis revealed 0 out of 12 RPD and 8 out of 24 percent recoveries outside of advisory QA/QC windows. Please note that ENCOTEC uses "ZZZZZ" on Forms 8D to depict bad analytical runs. ENCOTEC also employs an "X" flag to indicate manual editing. Please see Sample Data Package for complete details.

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 has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

Thomas H. Marshall
CLP Project Manager
THM
75102

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devils'Swamp Lake

Case# 18985

SDG# MFZ-641

Date: 12-17-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section.
Samples were:

INORGANIC:	MFZ-641	MFZ-741		
	MFZ-661			
	MFZ-662			
	MFZ-737			
	MFZ-738			
ORGANIC:				

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-17-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator , Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devils'Swamp Lake
Case # 18985
SDG # MFZ-641

Data was found: ( ) Acceptable
(X) Provisional
( ) Unacceptable

Action required by TPO: (X) Yes
( ) No

COMMENTS:

Failure to analyze CCV and CCB at the beginning of the runs.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18985
LABORATORY WADSPA (PA)
CONTRACT # 68-D2-0049
SDG # MFZ641
SOW# ILM02.1
ACCT # 3TFAJN49 SF # TFAU4E

SITE Devils Swamp Lake
NO. OF SAMPLES/
MATRIX 6/water
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Mike Fertitta
COMPLETION DATE December 17, 1992

SAMPLE NOs.: MFZ641, MFZ661, MFZ662, MFZ737, MFZ738, MFZ741

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	N/A
2. CALIBRATIONS	O	O	O	N/A
3. BLANKS	X	X	O	N/A
4. ICS	O			
5. LCS	O	O	N/A	N/A
6. DUPLICATE ANALYSIS	O	O	X	N/A
7. MATRIX SPIKE	O	X	O	N/A
8. MSA		O		
9. SERIAL DILUTION	O			
10. SAMPLE VERIFICATION	O	O	X	N/A
11. OTHER QC	O	X	O	N/A
12. OVERALL ASSESSMENT	X	X	X	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A= Not applicable

ACTION ITEMS: Blank concentrations were above the instrument detection limits; a matrix spike recovery was below the quality control limit, and furnace atomic absorption analytical spike recoveries were outside of the quality control limits for thirteen of twenty-four determinations.

AREAS OF CONCERN:

NOTABLE PERFORMANCE: Method of standard addition and serial dilution results met quality control criteria. Mercury met quality control criteria.

4. **ICS**

Interference check sample criteria were met.

5. **LCS**

All laboratory control sample results were acceptable.

6. **Duplicate Analysis**

All duplicate results met technical quality control criteria.

7. **Matrix Spike**

A. The selenium results are qualified as estimated (J and UJ) due to a 70.0% pre-digestion matrix spike recovery. Matrix interference is suspected.

B. All other analytes had acceptable pre-digestion matrix spike recoveries.

8. **MSA**

Method of standard addition results were acceptable.

9. **Serial Dilutions**

All serial dilution results met quality control criteria.

10. **Sample Verification**

A. A resubmission, in response to CCS, was received and included at the beginning of the data package.

B. The raw data (pages 214 and 222) indicate that samples MFZ641, MFZ661, MFZ661D/S, MFZ737, and MFZ738 were diluted for mercury analysis. These dilutions were not reported on Forms 14 (pages 54 and 55). The laboratory has been contacted for corrections and resubmission.

11. **Other QC**

Furnace Atomic Absorption (FAA) Quality Control

A. The arsenic results for samples MFZ641 and MFZ737 are qualified as estimated (UJ) due to FAA analytical spike recoveries of 69.8% and 83.8%, respectively. Matrix interference is suspected.

B. The lead results for samples MFZ661, MFZ662, MFZ737, and MFZ738 are qualified as estimated (J and UJ) due to FAA analytical spike recoveries of 131.3%, 125.5%, 139.3%, and 126.5%, respectively. Matrix interference is suspected.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18985 SDG No. MFZ641 SDG Nos. To Follow SAS No. Date Rec 11/12/92

EPA Lab ID: WADSPA
Lab Location: Pittsburgh, PA
Region: 6 Audit No.: 1933MJF
Re_Submitted CSF? Yes ____ No X
Box No(s): 1
COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?		X	
20a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Michael J. Fertitta — Michael J. Fertitta/Data Reviewer — Date 12/16/92
Audited by: _____ — _____ — Date _____
Audited by: _____ — _____ — Date _____
Signature — Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
Entered by: _____ _____
Reviewed by: _____ _____
Signature — Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Road, Houston, TX 77099 (713) 983-2243

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name David F. Brennan

Firm Wadsworth/Alert Laboratories, Inc.

City Pittsburgh **State** PA

Telephone (412) 826-5477 **Ext.** _____

Fax Telephone No. (412) 826-5571 **Ext.** _____

Sender:

Name Michael J. Fertitta

Date December 17, 1992 **Time** _____

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2243.

MESSAGES: _____

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case
Case 18985 SDG MFZ641

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
FAX Record Log

Date of FAX: December 17, 1992

Laboratory Name: Wadsworth/Alert Laboratories, Inc.

Lab Contact: David F. Brennan

Region: 6

Regional Contact: Michael J. Fertitta (ESAT)

Initiated by: Region

In reference to data for the following sample numbers:

MFZ641, MFZ661, MFZ737, MFZ738

Summary of Questions/Issues:

The raw data (pages 214 and 222) indicate that samples MFZ641, MFZ661, MFZ661D/S, MFZ737, and MFZ738 were diluted for mercury analysis. These dilutions were not reported on Forms 14 (pages 54 and 55). Please correct and resubmit the Forms 14.

Summary of Resolutions:

Region expects lab to look into items and submit data within fourteen days to:

Attn: Christy Macdowell - ESAT
c/o US EPA Regional Laboratory
10625 Fallstone Road
Houston, TX 77099

Michael J. Fertitta — 12/17/92
Signature — Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TX 77099

RESUBMITTED DATA REVIEW REPORT

DATE: December 30, 1992 CASE #: 18985

SAS #: _____

TO: J. Jones (6H-MA) SDG #: MFZ641

USEPA Region 6 SITE NAME: Devil's Swamp Lake

LAB NAME: WADSPA

FROM: Michael J. Fertitta
ESAT

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

RESUBMISSION IN RESPONSE TO REGION:

The laboratory clarified the discrepancy involving the dilutions.

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 18985

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/29/92	FEDEX

Regional Information:

Sampler (Name): JEFF AYERS

Airbill Number: 250077434 5

Non-Superfund Program:

Sampler Signature: for JTA

5. Ship To: WADSWORTH/ALERT LABS, INC.
450 WILLIAMS PITT WAY
PITTSBURGH, PA 15238
(412) 826-5477
ATTN: CHRIS KOVITCH

Site Name: DEVIL'S SWAMP LAKE

City, State: SCOTLANDVILLE, LA

Site Spill ID:

3. Type of Activity:

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D): 1. HCl 2. HNO_3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. only: Nitrate/ Nitrite	Low Conc. only: Fluoride	High only: pH	High only: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
MFZ641	1	L	G	2	X							6-014250	BBR-SW01	10/27/92/0925	MEB	FY341	—
MFZ737	1	L	G	2	X							6-014075	DS-SW02	10/27/92/1610	PDD	FY347	—
MFZ661	1	L	G	2	X							6-014320	BBR-SW02	10/28/92/0941	MJE	FY361	—
MFZ661	1	L	G	2	X							6-014321	BBR-SW02	↓	↓	FY361	—
MFZ662	1	L	G	2	X							6-014326	BBR-SW03	10/28/92/1020	↓	FY362	D (FY361)
~~MFZ738~~	~~1~~	~~L~~	~~G~~	~~2~~	X							6-014080	DS-SW03	10/28/92/1080	PDD	FY438	—
MFZ738	1	L	G	2	X							6-014080	DS-SW03	10/28/92/0910	PDD	FY438	—
MFZ741	4	L	G	2	X							6-014262	DSL-ER02	10/28/92/1600	LV	FY441	—

Shipment for Case complete? (Y/N): YES

Page 1 of 1

Sample used for a spike and/or duplicate: MFZ 661

Additional Sampler Signatures: for MJE, MEB, PDD

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/29/92 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy for return to Region Yellow - Lab Copy for Return to SMO

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

1340192

Inorg-1

WADSWORTH/ Laboratories

450 William Pitt Way
Pittsburgh, PA 15238

412-826-5477
FAX 412-826-5577

November 10, 1992

USEPA Region 6 Laboratory
10625 Fallstone Road
Houston, TX 77099
Attn: Ms. Meg Jou

Dear Ms. Jou:

Please find enclosed the Inorganic Analysis CSF Package for Case No. 18985, SDG No. MFZ641. Please call with any questions.

Sincerely,

David F. Brennan

David F. Brennan
CLP Project Manager

cc: Mr. Dick Thacker - SMO
Data Audit Staff - EMSL/LV

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: Wadsworth/ALERT Labs City/State: PGH/PA

Case No. 18965 SDG No. MF2641 SDG Nos. to Follow: _____ _____ _____

SAS No. _____ Contract No. 68D20049 SOW No. ILM02.1

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II D and Section III V)

		Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
1.	Inventory Sheet (DC-2) (Do not number)			✓	✓
2.	Cover Page / Case Narrative	1	3	✓	✓
3.	Inorganic Analysis Data Sheet (Form I-IN)	4	9	✓	✓
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	10	13	✓	✓
5.	CRDL Standards For AA and ICP (Form IIB-IN)	14	16	✓	✓
6.	Blanks (Form III-IN)	17	19	✓	✓
7.	ICP Interference Check Sample (Form IV-IN)	20	20	✓	✓
8.	Spike Sample Recovery (Form VA-IN)	21	21	✓	✓
9.	Post Digest Spike Sample Recovery (Form VB-IN)	NA			
10.	Duplicates (Form VI-IN)	22	22	✓	✓
11.	Laboratory Control Sample (Form VII-IN)	23	23	✓	✓
12.	Standard Addition Results (Form VIII-IN)	24	24	✓	✓
13.	ICP Serial Dilutions (Form IX-IN)	25	25	✓	✓
14.	Instrument Detection Limits (Form X-IN)	26	30	✓	✓
15.	ICP Interelement Correction Factors (Form XIA-IN)	31	31	✓	✓
16.	ICP Interelement Correction Factors (Form XIB-IN)	32	32	✓	✓
17.	ICP Linear Ranges (Form XII-IN)	33	33	✓	✓
18.	Preparation Log (Form XIII-IN)	34	38	✓	✓
19.	Analysis Run Log (Form XIV-IN)	39	55	✓	✓
20.	ICP Raw Data	56	145	✓	✓
21.	Furnace AA Raw Data	146	206	✓	✓
22.	Mercury Raw Data	207	227	✓	✓

		Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
23.	Cyanide Raw Data	NA			✓
24.	Preparation Logs Raw Data	226	232	✓	✓
25.	Percent Solids Determination Log	NA			
26.	Traffic Report	233	233	✓	✓
27.	EPA Shipping/Receiving Documents				
	Airbill (No. of Shipments 1)	234	234	✓	✓
	Chain-of-Custody Records	233	233	✓	✓
	Sample Tags	235	237	✓	✓
	Sample Log-In Sheet (Lab & DC1)	238	238	✓	✓
	SDG Cover Sheet	239	239	✓	✓
28.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs				
	Sample Receiving Narrative	240	240	✓	✓
	pH log	241	241	✓	✓
29.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)				
	Sample Control Summary	242	247	✓	✓
30.	Internal Original Sample Prep & Analysis Records (describe or list)				
	Prep Records				
	Analysis Records				
	Description				
31.	Other Records (describe or list)				
	Telephone Communication Log				

32. Comments:

Completed by (CLP Lab): David J. Brennan (Signature) — David F. Brennan, CLP Project Manager (Print Name & Title) — 11/11/92 (Date)

Audited by (EPA): Michael J. Fertitta (Signature) — MICHAEL J. FERTITTA, DATA REVIEWER (Print Name & Title) — 12/16/92 (Date)

WADSWORTH/ Laboratories
[illegible]
[illegible] Way
[illegible] PA 15238
412-826-5477
FAX 412-826-5571

CASE NARRATIVE

LAB NAME: Wadsworth/ALERT Labs
LAB CODE: WADSPA
CASE NO.: 18985
SDG NO.: MFZ641

Sample Numbers in SDG:
MFZ641
MFZ661
MFZ662
MFZ737
MFZ738
MFZ741

To meet the replicate requirements of the agency standard and because Varian AA's do not print out replicate data in concentration units, a software program called VARFIT was utilized to convert the replicates into concentration units. Some slight variations between the Varian results and the VARFIT results exist due to rounding differences. The results from the VARFIT program were reported.

See sample receiving narrative for receiving discrepancies.

A Corning Company

Since 1938
WADSWORTH/ALERT
LABORATORIES, INC.
Sampling, testing, mobile labs
450 William Pitt Way
Pittsburgh, PA 15238

DATA CERTIFICATION

"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 his designee, as verified by the following signature."

David F. Brennan — Nov 10, 1992

David F. Brennan
CLP Project Manager

CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Pittsburgh, Pennsylvania (412) 826-5477
LABORATORY: Tampa, Florida (813) 621-0784
24-HOUR ALERT LINE (216) 497-9338

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: WADSWORTH_ALERT_LABS_____ Contract: 68D20049__

Lab Code: WADSPA Case No.: 18985 SAS No.: _____ SDG No.:MFZ641

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
_MFZ641_____	__MFZ641_____
_MFZ661_____	__MFZ661_____
_MFZ661D_____	__MFZ661D_____
_MFZ661S_____	__MFZ661S_____
_MFZ662_____	__MFZ662_____
_MFZ737_____	__MFZ737_____
_MFZ738_____	__MFZ738_____
_MFZ741_____	__MFZ741_____

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: David F. Brennan Name: David F. Brennan

Date: 11/10/92 Title: CLP Project Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devils Swamp Ewell

Case# 18931

SDG# MFZ-701

Date: 1-11-1993

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI M C Ritter

To : J. Jones ,6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section.
Samples were:

INORGANIC:	MFZ-701 TO			
	MFZ-715			
	MFZ-801			
ORGANIC:				

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 1-11-1993

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator ,Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devils Swamp Ewell
Case # 18931
SDG # MFZ-701

Data was found: ( ) Acceptable

(X) Provisional

( ) Unacceptable

Action required by TPO: ( ) Yes

(X) No

COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931
LABORATORY Chemtech Group (NJ)
CONTRACT # 68-D2-0041
SDG # MFZ701
SOW # ILM02.1
ACCT # 3TFAJN34 SF # TFAUN1

SITE Devil's Swamp Ewell
NO. OF SAMPLES/
MATRIX 16/soils
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Youree Holloway
COMPLETION DATE January 5, 1993

SAMPLE NO.: MFZ701 MFZ702 MFZ703 MFZ704 MFZ705 MFZ706 MFZ707 MFZ708 MFZ709 MFZ710 MFZ711 MFZ712 MFZ713 MFZ714 MFZ715 MFZ801

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	N/A
2. CALIBRATIONS	O	O	O	N/A
3. BLANKS	X	X	O	N/A
4. ICS	O			
5. LCS	O	O		
6. DUPLICATE ANALYSIS	O	O	O	N/A
7. MATRIX SPIKE	O	X	O	N/A
8. MSA		X		
9. SERIAL DILUTION	O			
10. SAMPLE VERIFICATION	O	X	O	N/A
11. OTHER QC	N/A	X	N/A	N/A
12. OVERALL ASSESSMENT	X	X	O	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A = Not applicable

ACTION ITEMS: Blank concentrations were above the instrument detection limits; matrix spike recoveries were outside of the quality control limits; method of standard addition correlation coefficients were below 0.995; FAA analytical spike recoveries were below 40% even when diluted; a percent relative standard deviation for duplicate injections were above 20% on the initial run and the rerun, and FAA analytical spike recoveries exceeded the quality control limits for twenty-four of sixty-four determinations.

AREAS OF CONCERN:

NOTABLE PERFORMANCE:

B. Preparation Blank

1. Soil Samples

The concentration of vanadium in the soil preparation blank was above the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).

2. Water Samples

The concentration of arsenic in the water preparation blank was above the absolute value of the negative IDL.

C. All other blank results were acceptable.

4. ICS

Interference check sample criteria were met.

5. LCS

All laboratory control sample results were acceptable.

6. Duplicate Analysis

All duplicate results met technical quality control criteria.

7. Matrix Spike

Pre-digestion Matrix Spike Recovery

A. The lead and thallium results are qualified as estimated (J and UJ) due to pre-digestion matrix spike recoveries of 56.5% and 55.3%, respectively. Physical or chemical interference exists in the samples.

B. All other analytes had acceptable pre-digestion matrix spike recoveries.

8. MSA

A. The arsenic result for sample MFZ702 is qualified as estimated (J) due to correlation coefficients of 0.9935 and 0.9894. Physical or chemical interference exist in the sample.

B. The lead results for samples MFZ703D, MFZ707, and MFZ712 are qualified as estimated (J) due to correlation coefficients less than 0.995. Physical or chemical interference exist in the sample.

C. The other method of standard addition results were acceptable.

B. Matrix spike recoveries were below the lower quality control limit for lead and thallium.

C. The method of standard addition correlation coefficients for four sample results were below 0.995.

D. FAA analytical spike recoveries were below 40% two times even when diluted for five selenium sample results.

E. The percent relative standard deviations for duplicate injections were above 20% on the initial run and the rerun for selenium in sample MFZ703.

F. FAA analytical spike recoveries exceeded the quality control limits for twenty-four of sixty-four determinations.

All other technical requirements were met.

Mantech Environmental Technology
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 EL: (713) 983-2135

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Divyajit Mehta

Firm Chemtech Consulting Group

City Englewood **State** NJ

Telephone (201) 567-6868 **Ext.** _____

Fax Telephone No. (201) 567-1333 **Ext.** _____

Sender:

Name Youree Holloway

Date 1/6/93 **Time** _____

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2135

Messages: _____

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case 18931 SDG No. MFZ701 SDG Nos. To Follow SAS No. Date Rec 11/27/92

EPA Lab ID: CHEM

Lab Location: Englewood, NJ

Region: 6 Audit No.: 18931 MFZ701

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?	X		
20a. If "No", does the copy indicate where original documents are located?			

Audited by: Youree L Holloway ESAT YOUREE HOLLOWAY/DATA REVIEWER Date 1/5/93 YLH

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signiture Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

EPA United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record
(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 18931

22

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/22/92	FEDERAL EXPRESS

Regional Information

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 2500774415

Non-Superfund Program

Sampler Signature: [signature]

Site Name: DEVIL'S SWAMP

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

5. Ship To: CHEMTECH CONSULTING GROUP
110 ROUTE 4
ENGLEWOOD, NJ 07631
(201) 567-6868
ATTN: CHIRAG THAKKHAR

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. only Nitrate/Nitrite	Low Conc. only Fluoride	High only pH	High only Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
MFZ701	5	L	C	N	X							6-013939	DS-SS-01	10/19/92/1430	JTA	FY401	—
MFZ702	5	L	C	N	X							6-013940	DS-SS-02	10/19/92/1500	JTA	FY402	—
MFZ703	5	L	C	N	X							6-013941	DS-SS-03	10/19/92/1510	JTA	FY403	D
MFZ704	5	L	C	N	X							6-013942	DS-SS-04	10/19/92/1600	JTA	FY404	—
MFZ705	4	L	C	2	X							6-013938	DS-ER-01	10/19/92/1048	JTA	FY405	B
MFZ707	5	L	C	N	X							6-013950	DS-SS-05	10/20/92/1040	PDD	FY407	—
MFZ706	5	L	C	N	X							6-013946	DS-SS-06	10/20/92/1130	PDD	FY406	—
MFZ801	5	L	C	N	X							6-013954	DS-SS-07	10/20/92/1237	PDD	FY500	—
MFZ708	5	L	C	N	X							6-013958	DS-SS-08	10/20/92/1405	PDD	FY408	—
MFZ709	5	L	C	N	X							6-013962	DS-SS-09	10/20/92/1525	PDD	FY409	—

Shipment for Case complete? (Y/N): N

Page 1 of ___

Sample used for ~~a spike and/or~~ duplicate: MFZ 703

Additional Sampler Signatures: [signature]

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	102192 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy for return to Region Yellow - Lab Copy for Return to SMO

REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

Inorg-1

I 34017

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (If applicable):

Case No.: 18931

12

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/22/92	FEDERAL Express

Regional Information

Sampler (Name): JEFFREY T. AYERS

Airbill Number: 250077 4415

Non-Superfund Program

Sampler Signature: Jeffrey T. Ayers

5. Ship To: CHEMTECH CONSULTING GROUP, 110 ROUTE 4, ENGLEWOOD, NJ 07631, (201) 567-6868, ATTN: CHIRAG THAKKHAR

Site Name: DEVIL'S SWAMP

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

City, State: SCOTLANDVILLE, LA

Site Spill ID

6. Preservative (Enter in Column D): 1. HCl, 2. HNO3, 3. NaOH, 4. H_2SO_4, 5. $K_2CR_2O_7$, 6. Ice only, 7. Other (Specify), N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/ Grab	D Preservative from Box 6	E. RAS Analysis: Metals Total	Metals Dissolved	Low Conc. only Cyanide	Low Conc. only Nitrate/ Nitrite	Low Conc. only Fluoride	High only pH	High only Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
MFZ710	5	L	C	N	X							6-013966	DS-SS-10	10/20/92/1600	PDD	FY410	—
MFZ711	5	L	C	N	X							6-013970	DS-SS-11	10/21/92/0930	PDD	FY411	—
MFZ712	5	L	C	N	X							6-013974	DS-SS-12	10/21/92/1100	PDD	FY412	—
MFZ713	5	L	C	N	X							6-013978	DS-SS-13	10/21/92/1145	PDD	FY413	—
MFZ714	5	L	C	N	X							6-013982	DS-SS-14	10/21/92/1430	PDD	FY414	—
MFZ715	5	L	C	N	X							6-013986	DS-SS-15	10/21/92/1610	PDD	FY415	—

Shipment for Case complete? (Y/N): N

Page 1 of ___

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: Paul Dwyer

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Jeffrey T. Ayers	102192 1000				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Is custody seal intact? Y/N/none	

Split Samples: ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy for Return; Pink - SMO Copy; White - Lab Copy for return to Region; Yellow - Lab Copy

REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

I 34016

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TX 77099

93 FEB 19 AM 11:18

RESUBMITTED DATA REVIEW REPORT

DATE: February 15, 1993

CASE #: 18931

SAS #: _____

TO: J. Jones 6H-MA

USEPA Region 6

SDG #: MFZ701

Site Name: Devil's Swamp Ewell

Lab Name: Chemtech Group (NJ)

From: Youree Holloway

ESAT

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

A. The resubmitted information does not affect the original data review.

B. Form IIA's were resubmitted and corrected for arsenic CCV's #2 and #5.

C. Raw data page 120 was resubmitted and corrected for MFZ703D.

D. Please replace original pages with the resubmitted pages.

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: [illegible] City/State: NJ

Case No. [illegible] SDG No. MF37 / SDG Nos. to Follow: _____ _____ _____

SAS No. _____ Contract No. _____ SOW No. 1-1102.1

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II D and Section III V)

		Page Nos.		(Please Check:)	
		From	To	Lab	Region
1.	Inventory Sheet (DC-2) (Do not number)			✓	✓
2.	Cover Page	01	01	✓	✓
3.	Inorganic Analysis Data Sheet (Form I-IN)	02	17	✓	✓
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	18	22	✓	✓
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6.	Blanks (Form III-IN)	24	27	✓	✓
7.	ICP Interference Check Sample (Form IV-IN)	28	28	✓	✓
8.	Spike Sample Recovery (Form VA-IN)	29	29	✓	✓
9.	Post Digest Spike Sample Recovery (Form VB-IN)	—	—	—	✓
10.	Duplicates (Form VI-IN)	30	30	✓	✓
11.	Laboratory Control Sample (Form VII-IN)	31	31	✓	✓
12.	Standard Addition Results (Form VIII-IN)	32	32	✓	✓
13.	ICP Serial Dilutions (Form IX-IN)	33	33	✓	✓
14.	Instrument Detection Limits (Form X-IN)	34	38	✓	✓
15.	ICP Interelement Correction Factors (Form XIA-IN)	39	42	✓	✓
16.	ICP Interelement Correction Factors (Form XIB-IN)	—	—	—	—
17.	ICP Linear Ranges (Form XII-IN)	43	43	✓	✓
18.	Preparation Log (Form XIII-IN)	44	47	✓	✓
19.	Analysis Run Log (Form XIV-IN)	48	70	✓	✓
20.	ICP Raw Data	72A	120AAC	✓	✓
21.	Furnace AA Raw Data	71	130	✓	✓
22.	Mercury Raw Data	131	134	✓	✓

		Page Nos.		(Please Check:)	
		From	To	Lab	Region
23.	Cyanide Raw Data	—	—	—	
24.	Preparation Logs Raw Data	137	142	✓	✓
25.	Percent Solids Determination Log	143	144	✓	✓
26.	Traffic Report	145	146	✓	✓
27.	EPA Shipping/Receiving Documents				
	Airbill (No. of Shipments 21)	147	147	✓	✓
	Chain-of-Custody Records	—	—	—	
	Sample Tags	148	153	✓	✓
	Sample Log-In Sheet (Lab & DC1)	154	156	✓	✓
	SDG Cover Sheet	157	157	✓	✓
28.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs				
	_____				
	_____				
29.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)				
	_____				
	_____				
30.	Internal Original Sample Prep & Analysis Records (describe or list)				
	Prep Records _____				
	Analysis Records _____				
	Description _____				
31.	Other Records (describe or list)				
	Telephone Communication Log				
	_____				
	_____				

32. Comments:

_____

_____

Completed by (CLP Lab): Parveen Hasan — 11/25/92

(Signature) (Print Name & Title) (Date)

Audited by (EPA): Diane Gregg, Scientist Assoc ESAT — 12/16/92

(Signature) (Print Name & Title) (Date)

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ701

SOW No.: ILM02.1

EPA Sample No.	Lab Sample ID.
MFZ701	5327S
MFZ702	5328S
MFZ703	5329S
MFZ703D	5330S2
MFZ703S	5331DS
MFZ704	5332S
MFZ705	5333S
MFZ706	5335S
MFZ707	5334S
MFZ708	5337S
MFZ709	5338S
MFZ710	5339S
MFZ711	5340S
MFZ712	5341S
MFZ713	5342S
MFZ714	5343S
MFZ715	5344S
MFZ801	5336S

ere ICP interelement corrections applied?	Yes/No	YES
ere ICP background corrections applied?	Yes/No	YES
If yes-were raw data generated before application of background corrections?	Yes/No	NO

Comments:

No Duplicate and spike analysis were required for Rinsate Blank Sample MFZ 705.

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: _____ Name: DIVYAJIT MEHTA

Date: 11/25/91 Title: LABORATORY MANAGER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devil's Swamp Ewell

Case # 18931

SDG# MFZ-716

Date : 1-12-1993

Subject: CLP Data Review

From: Dr Melvin Ritter , Chemist , Region VI M.L. Ritter

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section. Samples were:

INORGANIC: MFZ-716 TO MFZ-721

ORGANIC:

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 1-12-1993

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator , Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devil's Swamp Ewell
Case # 18931
SDG # MFZ-716

Data was found: ( ) Acceptable
(X) Provisional
( ) Unacceptable

Action required by TPO: ( ) Yes
(X) No

COMMENTS:

Sample tags are missing from the data package.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18931
LABORATORY CHEM (NJ)
CONTRACT # 68-D2-0041
SDG # MFZ716
SOW# ILM02.1
ACCT # 3TFAJN34 SF # TFAUN1

SITE Devil's Swamp Ewell
NO. OF SAMPLES/
MATRIX 6/soil
REVIEWER (IF NOT ESD) ESAT
REVIEWER'S NAME Mike Fertitta
COMPLETION DATE January 11, 1993

SAMPLE NOs.: MFZ716, MFZ717, MFZ718, MFZ719, MFZ720, MFZ721

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	N/A
2. CALIBRATIONS	O	O	O	N/A
3. BLANKS	X	X	O	N/A
4. ICS	O			
5. LCS	O	O	O	N/A
6. DUPLICATE ANALYSIS	O	O	O	N/A
7. MATRIX SPIKE	O	X	O	N/A
8. MSA		X		
9. SERIAL DILUTION	O			
10. SAMPLE VERIFICATION	O	X	O	N/A
11. OTHER QC	X	X	O	N/A
12. OVERALL ASSESSMENT	X	X	O	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A= Not applicable

ACTION ITEMS: Blank concentrations were above the instrument detection limits; a matrix spike recovery was below the lower quality control limit; method of standard addition correlation coefficients were below 0.995; differences between field duplicate results exceeded the quality control limits, and furnace atomic absorption analytical spike recoveries were below the lower quality control limit for six of eighteen determinations.

AREAS OF CONCERN: Sample tags were indicated as present on the Form DC-1 but were not included in the CSF.

NOTABLE PERFORMANCE:

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 18931 SDG MFZ716 Site Devil's Swamp Ewell Lab CHEM (NJ)

COMMENTS: Six soil samples were analyzed at low concentrations for total metals. The data package is provisional because: blank concentrations were above the instrument detection limits; sample tags were indicated as present on the Form DC-1 but were not included in the CSF; a matrix spike recovery was below the lower quality control limit; method of standard addition correlation coefficients were below 0.995; differences between field duplicate results exceeded the quality control limits, and furnace atomic absorption analytical spike recoveries were below the lower quality control limit for six of eighteen determinations.

1. Holding Times

All holding time criteria were met.

2. Calibrations

All calibrations were acceptable.

3. Blanks

A. Calibration Blanks

1. The concentrations of beryllium and manganese in the calibration blanks were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL).

2. The concentrations of arsenic in the calibration blanks were above the absolute value of the negative IDL.

B. Preparation Blank

1. The concentration of manganese in the preparation blank was above the instrument detection limit (IDL) but less than the contract required detection limit (CRDL).

2. The concentration of arsenic in the preparation blank was above the absolute value of the negative IDL.

C. All other blank results were acceptable.

4. ICS

Interference check sample criteria were met.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 18931 SDG MFZ716 Site Devil's Swamp Ewell Lab CHEM (NJ)

5. LCS

All laboratory control sample results were acceptable.

6. Duplicate Analysis

All laboratory duplicate results met technical quality control criteria. Field duplicate results are discussed in "Other QC."

7. Matrix Spike

A. The selenium results for all samples are qualified as estimated (J) due to a 62.0% pre-digestion matrix spike recovery. Physical or chemical interferences in the samples are suspected.

B. All other analytes had acceptable pre-digestion matrix spike recoveries.

8. MSA

A. The arsenic result for sample MFZ719 is qualified as estimated (J) due to correlation coefficients of 0.9697 and 0.9770. Physical or chemical interferences in the sample are suspected.

B. The method of standard addition results were acceptable for sample MFZ718.

9. Serial Dilutions

All serial dilution results met quality control criteria.

10. Sample Verification

A. A resubmission, in response to CCS, was received and included at the beginning of the data package. The resubmitted page was corrected and should be used.

B. Sample tags were indicated as present on the Form DC-1 but were not included in the CSF (ILM02.0, B-11, F.3.d). The laboratory was contacted for an explanation.

Case 18931 SDG MFZ716 Site Devil's Swamp Ewell Lab CHEM (NJ)

11. Other QC

A. Furnace Atomic Absorption (FAA) Quality Control

1. The selenium results for samples MFZ716, MFZ717, MFZ718, MFZ719, MFZ720, and MFZ721 are qualified as estimated (J and UJ) due to FAA analytical spike recoveries of 77.0%, 60.0%, 58.0%, 51.5%, 61.0%, and 68.5%, respectively. Physical or chemical interferences in the samples are suspected.

2. All other results had acceptable FAA quality control.

B. The samplers placed an "N" in the "C" column on the chain of custody indicating that they did not use ice to preserve the soil samples at 4°C. as required (SOW ILM02.1 Exhibit D Section II, A.2). Although loss of volatile metals may have occurred, results were not qualified.

C. The samplers indicated on the traffic report that samples MFZ718 and MFZ719 were field duplicates. The following sample results were qualified.

1. The aluminum results for all samples are qualified as estimated (J) due to a 45.9% difference between field duplicate aluminum results.

2. The 10.8 mg/Kg difference between field duplicate chromium results exceeded the technical quality control limit of 9.4 mg/Kg (twice the CRDL). The chromium results for all samples are qualified as estimated (J).

3. All other field duplicate results met technical quality control criteria.

12. Overall Assessment

A. The data package is provisional for the following reasons:

1. Blank concentrations were above the instrument detection limits for arsenic, beryllium, and manganese.

2. Sample tags were indicated as present on the Form DC-1 but were not included in the CSF.

3. The matrix spike recovery was below the lower quality control limit for selenium.

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 18931 SDG MFZ716 Site Devil's Swamp Ewell Lab CHEM (NJ)

12. Overall Assessment (continued):

4. Method of standard addition correlation coefficients were below 0.995 for the determination of arsenic in sample MFZ719.

5. Differences between field duplicate aluminum and chromium results exceeded the quality control limits.

6. Furnace atomic absorption analytical spike recoveries were below the lower quality control limit for six of eighteen determinations. All selenium results were qualified.

B. All other technical requirements were met.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 18931 SDG No. MFZ716 SDG Nos. To Follow SAS No. Date Rec 12/01/92

EPA Lab ID: CHEM
Lab Location: Englewood, NJ
Region: 6 Audit No.: 18931/MFZ716
Re_Submitted CSF? Yes _____ No X
Box No(s): 1
COMMENTS:

17 Sample tags were indicated as present on the Form DC-1 but were not included in the CSF (ILM02.0, B-11, F.3.d). The laboratory was contacted for an explanation.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?		X	
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?	X		
20a. If "NO", does the copy indicate where original documents are located?			X

Audited by: Michael J. Fertitta Michael J. Fertitta/Data Reviewer Date 01/08/93
Audited by: _____ _____ Date _____
Audited by: _____ _____ Date _____
Signature Printed Name/Title

TO BE COMPLETED BY CEAT

Date Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____
Entered by: _____ _____
Reviewed by: _____ _____
Signature Printed Name/Title

ManTech Environmental Technology, Inc.
ESAT Region 6

c/o US EPA 10625 Fallstone Road, Houston, TX 77099 (713) 983-2243

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name Divyajit Mehta

Firm CHEM

City Englewood **State** NJ

Telephone (201) 567-6868 **Ext.** _____

Fax Telephone No. (201) 567-1333 **Ext.** _____

Sender:

Name Michael J. Fertitta

Date January 12, 1993 **Time** _____

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2243.

MESSAGES: _____

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to
Case 18931 SDG MFZ716

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: January 12, 1993

Laboratory Name: CHEM

Lab Contact: Divyajit Mehta

Region: 6

Regional Contact: Michael J. Fertitta (ESAT)

Initiated by: Region

In reference to data for the following sample numbers:

MFZ716, MFZ717, MFZ718, MFZ719, MFZ720, MFZ721

Summary of Questions/Issues:

Sample tags were indicated as present on the Form DC-1 but were not included in the CSF (ILM02.0, B-11, F.3.d). Please submit the sample tags or photocopies of the sample tags indicating where the original tags are located.

Summary of Resolutions:

Region expects lab to look into items and submit data within fourteen days to:

Attn: Christy Macdowell - ESAT
c/o US EPA Regional Laboratory
10625 Fallstone Road
Houston, TX 77099

Michael J Fertitta
Signature

01/12/93
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TX 77099

RESUBMITTED DATA REVIEW REPORT

DATE: January 25, 1993 CASE #: 18931

SAS #: _____

TO: J. Jones (6H-MA) SDG #: MFZ716

USEPA Region 6 SITE NAME: Devil's Swamp Ewell

LAB NAME: CHEM

FROM: Michael J. Fertitta
ESAT

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

RESUBMISSION IN RESPONSE TO REGION:

The sample tags were submitted and should be included with the SDG. However, the sample tags were not submitted in a plastic bag, and a revised Form DC-2 was not received. The laboratory was contacted for clarification and additional resubmission.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TX 77099

RESUBMITTED DATA REVIEW REPORT

DATE: January 25, 1993 CASE #: 18931

*February 1, 1993 SAS #: _____

TO: J. Jones (6H-MA) SDG #: MFZ716

USEPA Region 6 SITE NAME: Devil's Swamp Ewell

LAB NAME: CHEM

FROM: Michael J. Fertitta
ESAT

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

RESUBMISSION IN RESPONSE TO REGION:

The sample tags were submitted and should be included with the SDG. However, the sample tags were not submitted in a plastic bag, and a revised Form DC-2 was not received. The laboratory was contacted for clarification and additional resubmission.

*SECOND RESUBMISSION IN RESPONSE TO REGION:

The revised Form DC-2 was received and should be used.

EPA — Inorganic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 18931

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	TPRC	10/26/92	FED EX

Regional Information	Sampler (Name)	Airbill Number
	JEFF AYERS	5266126106

Non-Superfund Program	Sampler Signature	5. Ship To
		CHEMTECH CONSULTING GRP 110 ROUTE 4 ENGLEWOOD, NJ 07631 (201) 567-6868 ATTN: CHIRAG THAKKHAR

Site Name	City, State	Site Spill ID
DEVIL'S SWAMP/EXXELL	SCOTLANDVILLE, LA	

6. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST-		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

6. Preservative (Enter in Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (Specify)
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Metals Cyanide	Low Conc. only Nitrate/ Nitrite	Low Conc. only Fluoride	High only pH	High only Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
MFZ716	5	L	C	N	X							6-013990	DS-SS16	10/22/92/1145	PDD	FY416	—
MFZ717					X							6-013993	DS-SS17	10/22/92/1215		FY417	—
MFZ718					X							6-013998	DS-SS18	10/22/92/1500		FY418	—
MFZ719					X							6-014002	DS-SS19	10/22/92/1510		FY419	D(MFZ718)
MFZ720					X							6-014006	DS-SS20	10/22/92/1600		FY420	—
MFZ721					X							6-014010	DS-SS21	10/22/92/1315		FY421	—

Shipment for Case complete? Y (Y/N)

Page 1 of 1

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: for PDD

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	10/26/92 1200				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy for return to Region Yellow - Lab Copy for Return

SEE FOR ADDITIONAL STANDARD INSTRUCTIONS

134029

	Page Nos From	To	(Please Check) Lab	Region
23. Cyanide Raw Data	N/A			
24. Preparation Logs Raw Data	179	182	✓	✓
25. Percent Solids Determination Log	183	183	✓	✓
26. Traffic Report	184	184	✓	✓
27. EPA Shipping/Receiving Documents				
Airbill (No. of Shipments 1)	185	185	✓	✓
Chain-of-Custody Records	N/A			
Sample Tags	N/A			
Sample Log-In Sheet (Lab & DCl)	186	187	✓	✓
SDG Cover Sheet	188	188	✓	✓
28. Misc. Shipping/Receiving Records (list all individual records)				
Telephone Logs	N/A			
_____	N/A			
_____	N/A			
29. Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)	N/A			
_____	N/A			
_____	N/A			
30. Internal Original Sample Prep & Analysis Records (describe or list)				
Prep Records _____	N/A			
Analysis Records _____	N/A			
Description _____	N/A			
31. Other Records (describe or list)				
Telephone Communication Log	N/A			
_____	N/A			
_____	N/A			

32. Comments:

_____

_____

Completed by (CLP Lab):

Chirag Thakkar (Signature) | CHIRAG THAKKAR (Print Name & Title) | 11/30/92 (Date)

Audited by (EPA):

Michael J Fertitta (Signature) | MICHAEL J FERTITTA DATA REVIEWER (Print Name & Title) | 1/8/93 (Date)

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: Chemtech Consulting Group City/State: Englewood, CO

Case No. 18931 SDG No. MF2716 SDG Nos. to Follow: - ____ ____ ____

SAS No. - Contract No. 68-D20041 SOW No. 3/90

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II D and Section III V)

		Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
1.	Inventory Sheet (DC-2) (Do not number)			✓	
2.	Cover Page	01	01	✓	✓
3.	Inorganic Analysis Data Sheet (Form I-IN)	02	07	✓	✓
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	08	11	✓	✓
5.	CRDL Standards For AA and ICP (Form IIB-IN)	12	12	✓	✓
6.	Blanks (Form III-IN)	13	15	✓	✓
7.	ICP Interference Check Sample (Form IV-IN)	16	16	✓	✓
8.	Spike Sample Recovery (Form VA-IN)	17	17	✓	✓
9.	Post Digest Spike Sample Recovery (Form VB-IN)	N/A			
10.	Duplicates (Form VI-IN)	18	18	✓	✓
11.	Laboratory Control Sample (Form VII-IN)	19	19	✓	✓
12.	Standard Addition Results (Form VIII-IN)	20	20	✓	✓
13.	ICP Serial Dilutions (Form IX-IN)	21	21	✓	✓
14.	Instrument Detection Limits (Form X-IN)	22	26	✓	✓
15.	ICP Interelement Correction Factors (Form XIA-IN)	N/A			
16.	ICP Interelement Correction Factors (Form XIB-IN)	27	30	✓	✓
17.	ICP Linear Ranges (Form XII-IN)	31	31	✓	✓
18.	Preparation Log (Form XIII-IN)	32	35	✓	✓
19.	Analysis Run Log (Form XIV-IN)	36	50	✓	✓
20.	ICP Raw Data	51	137	✓	✓
21.	Furnace AA Raw Data	138	172A	✓	✓
22.	Mercury Raw Data	173	178	✓	✓

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: CHEMTECH CONSULTING GROUP Contract: 68D20041

Lab Code: CHEM Case No.: 18931 SAS No.: SDG No.: MFZ716

SOW No.: ILM02.1

EPA Sample No.	Lab Sample ID.
MFZ716	5346S
MFZ716D	5347S2
MFZ716S	5348DS
MFZ717	5349S
MFZ718	5350S
MFZ719	5351S
MFZ720	5352S
MFZ721	5353S

ere 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: _____ Name: DIVYAJIT MEHTA

Date: 11/30/92 Title: LABORATORY MANAGER

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

Site Name Devils'Swamp Ewell

Case# 18980

SDG# MFZ-722

Date: 12-18-1992

Subject: **CLP Data Review**

From: Dr Melvin Ritter , Chemist , Region VI

To : J. Jones , 6H-MA , Region VI

A review of the laboratory raw data for the reference site has been completed by members of the Laboratory Section.
Samples were:

INORGANIC:	MFZ-722 TO			
	MFZ-736			
	MFZ-743			
ORGANIC:				

The data was found:

( ) Acceptable

(X) Provisional; use of data requires caution. Problems are noted in Review Summary.

( ) Unacceptable; data should not be used. Problems are noted in Review Summary.

Questions regarding the review can be addressed to me.

Attachments

cc: Mahmoud El-Feky, 6E-HO
Mike Hiatt, EMSL/Las Vegas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

Date: 12-18-1992

Subject: CLP Data Review

From: Mahmoud El-Feky, Data Coordinator , Region VI

To: Dr. Melvin Ritter , Chemist , Region VI

Attached is the data review summary for Site Devils'Swamp Ewell
Case # 18980
SDG # MFZ-722

Data was found: ( ) Acceptable
(X) Provisional
( ) Unacceptable

Action required by TPO: ( ) Yes
(X) No

COMMENTS:

INORGANIC QA REVIEW
CONTINUATION PAGE

Case 18980 SDG MFZ722 Site Devils Swamp Ewell Lab Associated (CA)

Comments: One water sample and fifteen soil samples were analyzed at low concentrations for total metals. The data package is provisional because: blank concentrations were above the instrument detection limits; matrix spike recoveries were outside of the quality control limits; serial dilution differences exceeded the quality control limit; FAA analytical spike recoveries exceeded the quality control limits for nineteen of sixty-four determinations, and differences between field duplicate results exceeded quality control limits.

1. Holding Times

All holding time criteria were met.

2. Calibrations

All calibrations were acceptable.

3. Blanks

A. Soil Samples

1. Calibration Blanks

The concentrations of calcium, potassium, sodium, vanadium, and zinc in the soil calibration blanks were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL). Sample results for potassium, sodium, and vanadium greater than the IDL but less than five times the amount in any blank should be qualified as undetected (U).

2. Preparation Blank

The concentration of chromium in the soil preparation blank was above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL).

The concentrations of potassium and vanadium in the soil preparation blank were above the absolute value of the negative IDLs.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 18980 SITE Devils Swamp Ewell
LABORATORY Associated Labs (CA) NO. OF SAMPLES/
CONTRACT # 68-D2-0051 MATRIX 15/soils 1/water
SDG # MFZ722 REVIEWER (IF NOT ESD) ESAT
SOW # ILMO2.1 REVIEWER'S NAME Youree Holloway
ACCT # 3TFAJN46 SF # TFAUN1 COMPLETION DATE December 16, 1992

SAMPLE NO.: MFZ722 MFZ723 MFZ724 MFZ725 MFZ726 MFZ727 MFZ728 MFZ729 MFZ730 MFZ731 MFZ732 MFZ733 MFZ734 MFZ735 MFZ736 MFZ743

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	O	O	O	N/A
2. CALIBRATIONS	O	O	O	N/A
3. BLANKS	X	O	O	N/A
4. ICS	O			
5. LCS	O	O		
6. DUPLICATE ANALYSIS	O	O	O	N/A
7. MATRIX SPIKE	X	M	O	N/A
8. MSA		O		
9. SERIAL DILUTION	X			
10. SAMPLE VERIFICATION	O	X	O	N/A
11. OTHER QC	X	X	O	N/A
12. OVERALL ASSESSMENT	X	M	O	N/A

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.
N/A = Not applicable

ACTION ITEMS: Blank concentrations were above the instrument detection limits; matrix spike recoveries were outside of the quality control limits; serial dilution differences exceeded the quality control limit; FAA analytical spike recoveries exceeded the quality control limits for nineteen of sixty-four determinations, and differences between field duplicate results exceeded quality control limits.

AREAS OF CONCERN:

NOTABLE PERFORMANCE: Mercury results were acceptable.

B. Water Sample

1. Calibration Blanks

The concentrations of barium, calcium, magnesium, manganese, potassium, sodium, vanadium, and zinc in the water calibration blanks were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL). Sample results for barium, calcium, magnesium, manganese, potassium, vanadium, and zinc greater than the IDL but less than five times the amount in any blank should be qualified as undetected (U).

2. Preparation Blank

The concentrations of calcium, magnesium, and sodium in the water preparation blank were above the instrument detection limits (IDL) but less than the contract required detection limits (CRDL). Sample results for magnesium greater than the IDL but less than five times the amount in any blank should be qualified as undetected (U).

C. All other blank results were acceptable.

4. ICS

Interference check sample criteria were met.

5. LCS

All laboratory control sample results were acceptable.

6. Duplicate Analysis

All laboratory duplicate results met technical quality control criteria.

7. Matrix Spike

A. Pre-digestion Matrix Spike Recovery

1. The selenium results in the soil sample are qualified as unusable (R) due to a 25.0% pre-digestion matrix spike recovery. False negatives are possible. Matrix interference is suspected.

2. The antimony results in the soil sample are qualified as estimated (J and UJ) due to a pre-digestion matrix spike recovery. Matrix interference is suspected.

3. All other analytes had acceptable pre-digestion matrix spike recoveries.

8. MSA

The method of standard addition results were acceptable.

9. Serial Dilutions

A. The calcium and zinc results for the soil samples are qualified as estimated (J) due to serial dilution differences of 13.0% and 18.6%, respectively. Physical or chemical interference exists due to the sample matrix.

B. All other serial dilution results met quality control criteria.

10. Sample Verification

A. Arsenic in MFZ729, MFZ730, MFZ733, and MFZ734 need "S" flags. The method of standard addition were performed on these samples.

B. The laboratory response to CCS corrected the final interference check sample A from 201914 ug/L to 243800 ug/L.

11. Other QC

A. Furnace Atomic Absorption Quality Control

1. The arsenic result for MFZ736 is qualified as estimated (J) due to a 80.0% FAA analytical spike recovery. Matrix interference is suspected.

2. The thallium results for MFZ723, MFZ728, MFZ731, MFZ732, MFZ733, and MFZ736 are qualified as estimated (J and UJ) due to FAA analytical spike recoveries ranging from 53.0% to 84.5%. Matrix interference is suspected.

3. The FAA analytical spike recoveries for selenium in MFZ722, MFZ723, MFZ724, MFZ725, MFZ726, MFZ729, MFZ730, MFZ731, MFZ732, MFZ734, MFZ735, and MFZ736 ranged from 46.0% to 83.0%. Matrix interference is suspected.

4. All other analytes had acceptable FAA quality control.

B. Field Duplicates

1. The calcium results are qualified as estimated (J) due to a 77.4% relative percent difference for field duplicate results.

2. The zinc results are qualified as estimated (J) due to a 37.3% relative percent difference for field duplicate results.

12. Overall Assessment

The data package is provisional for the following reasons:

A. Blank concentrations were above the instrument detection limits.

B. Matrix spike recoveries were outside of the quality control limits.

C. Serial dilution differences exceeded the quality control limit.

D. FAA analytical spike recoveries exceeded the quality control limits for nineteen of sixty-four determinations.

E. Differences between field duplicate results exceeded quality control limits.

All other technical requirements were met.

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

18980 SDG No. MFZ722 SDG Nos. To Follow SAS No. Date Rec 11/12/92

Lab ID: ALI

Location: Orange, CA

Region: 6 Audit No.: YLH931

Re_Submitted CSF? Yes _____ No X

Box No(s): 1

COMMENTS:

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
TRAFFIC REPORT(s) PACKING LIST(s)			
11. Signed?	X		
12. Dated?	X		
AIRBILLS/AIRBILL STICKER			
13. Present?	X		
14. Signed?	X		
15. Dated?	X		
SAMPLE TAGS			
16. Does DC-1 list tags as being included?	X		
17. Present?	X		
OTHER DOCUMENTS			
18. Complete?	X		
19. Legible?	X		
20. Original?	X		
20a. If "No", does the copy indicate where original documents are located?			

Over for additional comments.

Audited by: Yonee L. Holloway ESAT YOUREE HOLLOWAY/DATA REVIEWER Date 12/16/92

Audited by: _____ _____ Date _____

Audited by: _____ _____ Date _____

Signiture Printed Name/Title

TO BE COMPLETED BY CEAT

Recvd by CEAT: _____ Date Entered: _____ Date Reviewed: _____

Entered by: _____ _____

Reviewed by: _____ _____

Signature Printed Name/Title

Mantech Environmental Technology
ESAT Region 6

c/o US EPA 10625 Fallstone Rd, Houston, TX 77099 TEL: (713) 983-2135

FACSIMILE COVER SHEET

Please deliver the following pages to:

Name James McCall

Firm Associated Labs

City Orange **State** CA

Telephone (714) 771-6900 **Ext.** _____

Fax Telephone No. (714) 538-1209 **Ext.** _____

Sender:

Name Youree Holloway

Date 12/17/92 **Time** _____

Total Number of pages including this Cover Sheet 2

If you do not receive all the pages or if any pages are unclear, please call: (713) 983-2135

Messages: _____

Fax Model No. Panafax UF-620 Fax No. (713) 983-2248

In Reference to Case
Case 18980 SDG MFZ722
Page 1 of 1 pages

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

FAX Record Log

Date of FAX: December 17, 1992

Laboratory Name: Associated Labs

Lab Contact: James McCall

Region: 6

Regional Contact: Youree Holloway (ESAT)

Fax Initiated by: Region

In reference to data for the following sample numbers:

MFZ722 MFZ723 MFZ724 MFZ725 MFZ726 MFZ727 MFZ728 MFZ729 MFZ730 MFZ731 MFZ732 MFZ733 MFZ734 MFZ735 MFZ736 MFZ743

Summary of Questions/Issues Discussed:

Arsenic in MFZ729, MFZ730, MFZ733, and MFZ734 need "S" flags. The method of standard addition were performed on these samples. Please submit corrected forms.

Summary of Resolutions:

The EPA expects the laboratory to look into items and submit data within ten working days to: Christy Macdowell ESAT, U.S. EPA, 10625 Fallstone Road, Houston TX 77099.

Youree L. Holloway 12/17/92
Signature Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
EPA HOUSTON LABORATORY
10625 FALLSTONE ROAD
HOUSTON, TX 77099

RESUBMITTED DATA REVIEW REPORT

DATE: January 17, 1992

CASE #: 18980

SAS #: _____

TO: J. Jones 6H-MA

USEPA Region 6

SDG #: MFZ722

Site Name: Devils Swamp Ewell

Lab Name: Associated Labs (CA)

From: Youree Holloway

ESAT

EFFECTS OF RESUBMITTED INFORMATION ON THE ORIGINAL DATA:

A. The resubmitted information does not affect the original data review.

B. Form Is resubmitted with "S" flags added for arsenic in MFZ729 MFZ730, MFZ733, and MFZ734. DC-2 form resubmitted.

C. Please place all resubmitted data pages in the data packages and remove previous pages.

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 1895

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/26/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 5266126121

Non-Superfund Program

Sampler Signature: [signature]

Site Name: DEVIL'S SWAMP/EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity: Lead: SF, PRP, ST, FED; Pre-Remedial: PA, SSI, LSI ☒; Remedial: RIFS, RD, RA, O&M, NPLD; Removal: CLEM, REMA, REM, OIL, UST

5. Ship To: ASSOCIATED LABS, INC. 806 NORTH BATAVIA ORANGE, CA 92668 (714) 771-6900 ATTN: TRACY MANNING

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaOH 4. H_2SO_4 5. $K_2CR_2O_7$ 6. Ice only 7. Other (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. only: Nitrate/Nitrite	Low Conc. only: Fluoride	High only: pH	High only: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
MFZ722	5	L	C	N	X							6-014014	DS-SS22	10/26/92/0930	PDD	FY422	—
MFZ723	↓	↓	↓	↓	X							6-014018	DS-SS23	10/26/92/1015	↓	FY423	—
MFZ724	↓	↓	↓	↓	X							6-014022	DS-SS24	10/26/92/1115	↓	FY424	—
MFZ725	↓	↓	↓	↓	X							6-014026	DS-SS25	10/26/92/1230	↓	FY425	—

Shipment for Case complete? (Y/N): N

Page 1 of 1

Sample used for a spike and/or duplicate: N/A

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/26/92 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
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SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

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I 340297

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable):

Case No.: 1898C

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/29/92	FED EX

Regional Information

Sampler (Name): JEFF AYERS

Airbill Number: 250077433A

Non-Superfund Program

Sampler Signature: [signature] for JTA

Site Name: DEVIL'S SWAMP/EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID:

3. Type of Activity

	Lead	Pre-Remedial	Remedial	Removal
SF			RIFS	CLEM
PRP		PA	RD	REMA
ST		SSI	RA	REM
FED		LSI	O&M	OIL
			NPLD	UST

5. Ship To:
ASSOCIATED LABORATORIES, INC.
806 NORTH BATAVIA
ORANGE, CA 92668
(714) 771-6900
ATTN: TRACY MANNING

6. Preservative (Enter In Column D)
1. HCl
2. HNO_3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (Specify)
N. Not preserved

7. Sample Description (Enter In Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. only: Nitrate/ Nitrite	Low Conc. only: Fluoride	High only: pH	High only: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC
MFZ726	5	L	C	N	X							6-014030	DS-SS26	10/27/92/0930	PDD	MFFY426	—
MFZ727					X							6-014034	DS-SS27	/0930		FY427	D (MFZ726)
MFZ728					X							6-014038	DS-SS28	/1100		FY428	—
MFZ729					X							6-014042	DS-SS29	/1330		FY429	S LR
MFZ730					X							6-014046	DS-SS30	/1430		FY430	—
MFZ731					X							6-014050	DS-SS31	/1530		FY431	—
MFZ732					X							6-014054	DS-SS32	/1610		FY432	D (MFZ731)
MFZ733					X							6-014058	DS-SS33	/1630		FY433	—

Shipment for Case complete? (Y/N): YES

Page 1 of 2

Sample used for a spike and/or duplicate: MFZ729

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number:

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	11/28/92 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report & Chain of Custody Record

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 1898L

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		6	PRC	10/29/92	FED EX

Regional Information

Sampler (Name): LUIS VEGA

Airbill Number: 2500774334

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: ASSOCIATED LABS, INC
806 NORTH BATAVIA
ORANGE, CA 92668
(714) 771-6900
ATTN: TRACY MANNING

Site Name: DEVIL'S SWAMP/EWELL

City, State: SCOTLANDVILLE, LA

Site Spill ID

3. Type of Activity

Lead		Pre-Remedial		Remedial		Removal	
SF				RIFS		CLEM	
PRP		PA		RD		REMA	
ST		SSI		RA		REM	
FED		LSI	X	O&M		OIL	
				NPLD		UST	

6. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaOH
4. H_2SO_4
5. $K_2CR_2O_7$
6. Ice only
7. Other (Specify)
N. Not preserved

7. Sample Description (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify)

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. only: Nitrate/Nitrite	Low Conc. only: Fluoride	High only: pH	High only: Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC (B = Blank S = Spike D = Duplicate PE = Perform. Eval. — = Not a QC Sample)
MFZ734	5	L	C	2	X							6-014062	DS-SS34	10/28/92/1025	PDD	FY434	—
MFZ735	5	↓	C	2	X							6-014066	DS-SS35	↓ 1110	↓	FY435	—
MFZ736	5	↓	C	2	X							6-014070	DS-SS36	↓ 1200	↓	FY436	—
MFZ743	4	↓	G	2	X							6-014269	DS-ER02	↓ 1615	LV	FY443	—

Shipment for Case complete? (Y/N) YES

Page 2 of 2

Sample used for a spike and/or duplicate

Additional Sampler Signatures: [signature] for PDD

Chain of Custody Seal Number

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	10/29/92 1800				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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Inorg-1

340177

FULL INORGANICS
COMPLETE SDG FILE (CSF)
INVENTORY SHEET

Lab Name: ASSOCIATED LABORATORIES, INC. City/State: ORANGE/CA

Case No. 13980 SDG No. MFZ722 SDG Nos. to Follow: _____ _____ _____

SAS No. _____ Contract No. 68D20051 SOW No. ILM02.1

All documents delivered in the Complete SDG File must be original documents where possible. (Reference Exhibit B, Section II D and Section III V)

		Page Nos. From	Page Nos. To	(Please Check:) Lab	(Please Check:) Region
1.	Inventory Sheet (DC-2) (Do not number)			___	___
2.	Cover Page	01	01	___	___
3.	Inorganic Analysis Data Sheet (Form I-IN)	02	17	___	___
4.	Initial & Continuing Calibration Verification (Form IIA-IN)	18	24	___	___
5.	CRDL Standards For AA and ICP (Form IIB-IN)	25	26	___	___
6.	Blanks (Form III-IN)	27	31	___	___
7.	ICP Interference Check Sample (Form IV-IN)	32	32	___	___
8.	Spike Sample Recovery (Form VA-IN)	33	34	___	___
9.	Post Digest Spike Sample Recovery (Form VB-IN)	35	35	___	___
10.	Duplicates (Form VI-IN)	36	37	___	___
11.	Laboratory Control Sample (Form VII-IN)	38	39	___	___
12.	Standard Addition Results (Form VIII-IN)	40	40	___	___
13.	ICP Serial Dilutions (Form IX-IN)	41	42	___	___
14.	Instrument Detection Limits (Form X-IN)	43	46	___	___
15.	ICP Interelement Correction Factors (Form XIA-IN)	47	47	___	___
16.	ICP Interelement Correction Factors (Form XIB-IN)	NA	___	___	___
17.	ICP Linear Ranges (Form XII-IN)	48	48	___	___
18.	Preparation Log (Form XIII-IN)	49	54	___	___
19.	Analysis Run Log (Form XIV-IN)	55	75	___	___
20.	ICP Raw Data	76	137	___	___
21.	Furnace AA Raw Data	138	186	___	___
22.	Mercury Raw Data	187	212	___	___

		Page Nos. From	To	(Please Check:) Lab	Region
23.	Cyanide Raw Data	NA			
24.	Preparation Logs Raw Data	213	220		
25.	Percent Solids Determination Log	221	223		
26.	Traffic Report	224	226		
27.	EPA Shipping/Receiving Documents				
	Airbill (No. of Shipments ____)	227	228		
	Chain-of-Custody Records	NA			
	Sample Tags	229	234		
	Sample Log-In Sheet (Lab & DC1)	235	236		
	SDG Cover Sheet	237	237		
28.	Misc. Shipping/Receiving Records (list all individual records)				
	Telephone Logs	NA			
	_____	NA			
	_____	NA			
29.	Internal Lab Sample Transfer Records & Tracking Sheets (describe or list)	238	238		
	_____	NA			
	_____	NA			
30.	Internal Original Sample Prep & Analysis Records (describe or list)				
	Prep Records Instrument logbook	239	241		
	Analysis Records Standard logbook	242	249		
	Description _____				
31.	Other Records (describe or list)				
	Telephone Communication Log				
	_____				
	_____				

32. Comments:
attached 2 original airbill and 16 sample tags.

~~Completed~~ by (CLP Lab):

(Signature)	TAMIRAN/DATA ANALYST (Print Name & Title)	11/10/92 (Date)

Audited by (EPA):

(Signature)	(Print Name & Title)	(Date)

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: ASSOCIATED_LABORATORIES__ Contract: 68D20051__

Lab Code: ALI___ Case No.: 18980 SAS No.: _____ SDG No.:MFZ722

SOW No.: ILM02

EPA Sample No.	Lab Sample ID
MFZ722	MFZ722
MFZ723	MFZ723
MFZ724	MFZ724
MFZ725	MFZ725
MFZ726	MFZ726
MFZ727	MFZ727
MFZ728	MFZ728
MFZ729	MFZ729
MFZ729D	MFZ729D
MFZ729S	MFZ729S
MFZ730	MFZ730
MFZ731	MFZ731
MFZ732	MFZ732
MFZ733	MFZ733
MFZ734	MFZ734
MFZ735	MFZ735
MFZ736	MFZ736
MFZ743	MFZ743
MFZ743D	MFZ743D
MFZ743S	MFZ743S

v00001

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: _____ Name: _JAMES MCCALL, JR._____

Date: _____ Title: _INORGANICS MANAGER_____