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Work Assignment No.: 019-2JZZ
Contract No.: 68-WP-0051
March 31, 1992

SUF 3/31/92
SUF 7/23/92

Ms. Sandra Foose
Pre - Remedial Assistant WAM
Environmental Services Division
U.S. Environmental Protection Agency
Region II
Edison, NJ 08837

RE: Aetna Chemical Corporation Site Inspection Prioritization Evaluation

Dear Ms. Foose,

The following is a summary of the Site Inspection Prioritization evaluation of the Aetna Chemical Corporation, Wallace Street Extension, Elmwood Park, New Jersey (CERCLIS ID No. NJD001471374) (Ref. No. 1).

General Description and Site History

The Aetna Chemical Corporation Facility is located on Block 1405, Lot 1 of the Wallace Street Extension in Elmwood Park, New Jersey. The site is located in an industrial/commercial area of the borough and is 2.6 acres in size. The property is bordered by Route 80 to the north, New York Southern and Western Railroad to the south, Main Trucking to the east and The Garden State Parkway to the west and northwest. The Aetna Facility is comprised of a small office, a chemical warehouse and 10 above ground storage tanks ranging in size from 6,000 - 25,000 gallons (Ref. No. 28, p. 4,19,20). The contents of the tanks vary and include isopropanol, acetone, heavy aromatic naphtha, methyl ethyl ketone, xylol, mineral spirits, toluene, chlorophene, hydrochloric acid, nitric acid, sulfuric acid, 1,1,1-trichloroethane, manganese sulfonate and fuel oil additive (Ref. Nos. 5; 28, p. 4). The tanks are situated in two clusters, six in an undiked area near the warehouse building and four in a diked but unlined area near the northeast corner of the site. Site topography indicates a gentle slope (less than 3%) to the north to northwest with a drainage ditch running along the east, north and west sides of the facility (Ref. Nos. 2; 28, p. 19). This ditch runs through an on-site wetland (Ref. No. 3). Figure 1 provides a Site Location Map.

The Aetna Chemical Corporation purchased the site in 1960. Prior to this date, the land was vacant and the former owner is presently unknown. From 1960 to the present, Aetna Chemical has been a distributor for producers of heavy and fine chemicals. Site activities include warehousing and delivery of chemicals in manufacturer's original containers, and repackaging of bulk chemicals and blending of detergents for special orders (Ref. No. 28, p. 4). A list of chemical products sold by Aetna Chemical is provided (Ref. No. 28, p. 46-48).

Evaluation of Existing Information

During the facility's history of operations, various on-site spills have been documented, prompting an investigation by the New Jersey Department of Environmental Protection (NJDEP), Division of Hazardous Waste Management (DHWM), Bureau of Planning and Assessment (BPA). (Ref. Nos. 6, 7, 27, p. 4) On February 2, 1990, a Pre-Sampling Assessment (PSA) was conducted at the Aetna Facility. During the PSA, numerous soil gas readings were detected above background on an Organic Vapor Analyzer, with the higher readings (55 ppm - > 1,000 ppm) observed in the area of the Above Ground Storage Tanks (AGSTs). Additionally, stained soil and a lack of vegetation was noted in the AGST area. NJDEP returned to the site on April 19, 1990 to collect 10 soil and 2 sediment samples (Ref. No. 28, p. 4-5). Samples were analyzed

for TCL organic compounds and total inorganics by a Contract Laboratory Program (CLP) certified laboratory in accordance with CLP protocols. Sample results were validated by the NJDEP Quality Assurance Section, Bureau of Environmental Measurements and Quality Assurance, Division of Hazardous Site Mitigation in accordance with EPA CLP 7/87 SOW Deliverable Requirements (Ref. No. 28, p. 196-204). Sample results indicated the presence of numerous organic and inorganic constituents including 1,1-dichloroethene, 1,1,1-dichloroethane, carbon tetrachloride, 4-methyl-2-pentanone, tetrachloroethene, naphthalene, benzo (a) pyrene, barium, cadmium, chromium, lead, manganese and mercury (Ref. No. 8). As a result of the April 19, 1990 sampling results and on-site observations, NJDEP requested Aetna Chemical to conduct a remedial investigation to further delineate on-site contamination (Ref. No. 9). Due to a lack of a well-defined on-site waste source and the presence of soil contamination throughout the unpaved AGST area, a waste quantity/source of 1 acre of contaminated soil was utilized in assessing site conditions. Based on existing information and analytical data, the main pathways of concern associated with the site are groundwater and surface water exposure.

Hazard Assessment

Updated and additional information and data collected to further evaluate the site included groundwater population data, sensitive environment information, 4-mile radius populations, and site historical files.

Groundwater Pathway - The Aetna Chemical site is situated above the Brunswick Shale Aquifer and is the aquifer of concern in the vicinity of the site. Up to 25 feet of unconsolidated deposits consisting of silts, sands and reddish-brown glacial till underlie the site above the late Triassic sandstones and shales of the Brunswick Formation which may be as thick as 2,000 feet in the surrounding area. Groundwater beneath the site may be as shallow as 4 feet below the soil surface and generally flows towards the west and northwest. Shallow groundwater discharge occurs through vertical leakage to the underlying aquifer (Ref. Nos. 10; 28, p. 5). The upper 300-500 feet of the Brunswick Formation is most often utilized for water supply since groundwater flow through the shale is dependant upon fracturing in the rock which is generally more prevalent towards the top of the formation (Ref. No. 10). The hydraulic conductivity of the aquifer of concern is estimated to be 10^{-8} cm/sec (Ref. No. 11). Although on-site groundwater sampling has not been conducted, there is potential for contamination of groundwater due to the soil contamination and the moderate permeability of the overlying soils which are hydraulically interconnected with the aquifer of concern (Ref. No. 28, p. 5). Two municipal water supply systems, Garfield and Fairlawn, derive drinking water from 29 wells, drilled to depths ranging from 300 - 400 feet, located within a 4-mile radius of the site. These wells are generally located to the north to northwest of the site with the closest being approximately 0.75 miles to the north (Ref. Nos. 2, 12, 13, 14). The aggregate population served by these two systems is 64,000 (0.0 - 0.25 mile, 0; 0.25 - 0.5 mile, 0; 0.5 - 1.0 mile, 24,620; 1.0 - 2.0 mil, 9,386; 2.0 - 3.0 mile, 26,000; 3.0 - 4.0 mile, 4,000) (Ref. No. 16). The proximity of the site to a wellhead protection area cannot be determined pending promulgation by the NJDEPE of protected areas (which are not yet defined) (Ref. No. 17).

Surface Water Pathway - The surface water pathway on site drains to the north to northwest into a drainage ditch near the site boundary (Ref. No. 28, p. 19). NJDEP collected two sediment samples from this drainage ditch during their April 19, 1990 Site Investigation, one upstream near the origin of the ditch (SED-1) and a second downstream near the property line (SED-2) (Ref. No. 28, p. 5-6). Organic and inorganic constituents were detected in SED-2 at significant concentrations when compared to the background sample SED-1, including benzo (a) pyrene, naphthalene, mercury, chromium, cadmium and lead (Ref. No. 8). Off-site, the drainage ditch flows west under the Garden State Parkway and empties into Fleischer's Brook which runs south through Elmwood Park and Garfield where it terminates in an unknown location (Ref. Nos. 18; 19). Overland flow of

surface water from the terminating point of the brook shown on USGS Topographic maps would generally be to the west towards the Passaic River (Ref. No. 2). This is indicated by an approximate 3% slope toward the river bank, however numerous intervening features (i.e., streets, etc.) are present along this overland route, lowering the potential for a release of constituents to the Passaic River (Ref. Nos. 2; 20). The average flow of the Passaic River is estimated to be 1156 cfs (Ref. No. 23). Because there are no fisheries or surface water intakes along the 15-mile surface water pathway, the potential for contamination of surface water to drinking water intakes and fisheries is minimal (Ref. Nos. 22; 26). There is a potential for further contamination of sensitive environments as 26 miles of wetlands frontage are located along the route (Ref. No. 3). The Aetna Chemical Site is located in a 100-year floodplain which increases the risk for a potential release of constituents to surface water (Ref. No. 4).

Soil Exposure Pathway - Analytical results of the NJDEP Site Inspection soil sampling indicate the presence of numerous organic and inorganic constituents associated with site activities including 1,1-dichloroethene, 1,1,1-trichloroethane, carbon tetrachloride, 4-methyl-2-pentone, tetrachloroethene, naphthalene, benzo (a) pyrene, barium, cadmium, chromium, lead, manganese and mercury (Ref. Nos. 5; 8; 27, p. 4). All soil samples were taken at a depth of 0 - 6 feet below the soil surface (Ref. No. 28, p. 7). Although there are no residences, schools or daycare facilities within 200 feet of the site boundary, a potential for soil exposure does exist (Ref. No. 28, p. 20). Aetna Chemical is an active facility with 14 workers on site (Ref. No. 27). Additionally, the site is not fenced, which allows public access to the property (Ref. No. 28, p. 6). There are no known terrestrial sensitive environments located on areas of documented soil contamination (Ref. No. 25).

Air Pathway - There is no analytical data available to determine whether or not a release of either organic or inorganic constituents has occurred to the air. However, during the February, 1990 NJDEP PSA ambient air readings were noted on the Organic Vapor Analyzer (OVA) of 8 ppm as calibrated to methane. Given the nature of operations and materials handled on-site and the unvegetated nature of soils in the area of the AGSTs, the potential for a release to air via gaseous vapors and soil particulates does exist (Ref. No. 28, p. 6). There are approximately 420,000 people living within a 4-mile radius of the site (0.0 - 0.25 mile, 2,153; 0.25 - 0.5 mile, 4,964; 0.5 - 1.0 mile, 13,655; 1.0 - 2.0 mile, 58,057; 2.0 - 3.0 miles, 137,953; 3.0 - 4.0 miles, 202,800) (Ref. No. 21).

Summary

Based on information contained in the site inspection report and additional information collected, groundwater and surface water are the pathways of concern. Although groundwater samples were not collected during the site inspection, groundwater is a major source of drinking water within 4 miles of the site, serving a population of approximately 64,000. The nearest drinking water well is 0.75 miles to the north of the site. A release of contaminants to surface water is suspected due to the presence of contaminants similar to those found in site soils detected in a drainage ditch located on the site property. This ditch runs through an on-site wetland. Additionally, there are greater than 25 miles of wetlands along the 15-mile surface water pathway.

Very truly yours,

FREDERICK V. LONEKER
SITE MANAGER

JOHN D. RIECKHOFF
PRE-REMEDIAL PROGRAM MANAGER

DENNIS STAINKEN, Ph.D.
WORK ASSIGNMENT MANAGER

This Report was conducted under the following USEPA Documentation Procedure

Guidance for Performing Site Inspections Under CERCLA Draft Publication 9345.1-0

ATTACHMENT 1

REFERENCES

1. U.S.E.P.A. Superfund Program, Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), List 8: Site/Event Listing, p. 3, November 27, 1991.

2. 4-Mile Vicinity Map for the Aetna Chemical Corporation based on Geological Survey Topographical Maps, 7.5 minute series, "Hackensack Quadrangle, NJ," 1955, Photorevised 1981; "Paterson Quadrangle, NJ," 1955, Photorevised 1981; "Orange Quadrangle, NJ," 1955, Photorevised 1981; "Weehawken Quadrangle, NJ," 1967, Photorevised 1981.

3. 15-Mile Surface Water Pathway Map based on Geological Survey Topographical Maps, 7.5 minute series, "Hackensack Quadrangle, NJ," 1955, Photorevised 1981; "Paterson Quadrangle, NJ," 1955, Photorevised 1981; "Orange Quadrangle, NJ," 1955, Photorevised 1981; "Weehawken Quadrangle, NJ," 1967, Photorevised 1981.

4. Flood Insurance Rate Map, Borough of Elmwood Park, New Jersey, Bergen County, Community - Panel Number 340500001B, U. S. Department of Housing and Urban Development, Federal Insurance Administration, February 26, 1982.

5. Letter from Andrew D. Soos, The Whitman Companies, to Arnold Schiff, NJDEP Division of Hazardous Waste Management (NJDEP-HWM), Metro Regional Office, June 25, 1991.

6. NJDEP Notice of Violation issued to Aetna Chemical Corporation, by Arnold Schiff, NJDEP Division of Hazardous Waste Management, Metro Regional Office, June 25, 1990.

7. New Jersey Department of Environmental Protection Duty Officer Notification Report, Case No. 91-05-00-0823, Aetna Chemical Corp. Hydrogen Peroxide Spill, May 8, 1991.

8. Project Note: Frederick V. Loneker, Malcolm Pirnie, Inc., to Aetna Chemical Corporation File, Subject: Data Summary Sheet - Organic and Inorganic Analyses, NJDEP-HWM, Bureau of Planning and Assessment April 19, 1990 Site Investigation Sampling Event, March 19, 1992.

9. Letter from Arnold Schiff, NJDEP-HWM, to Robert Baldanzi, Aetna Chemical Corporation, January 22, 1991.

10. Houghton, Hugh F. Hydrogeology of the Triassic Rocks of the Newark Basin: Technical Notes and Guide to Field Trip in Central New Jersey, New Jersey Geological Survey Open-File Report 86, April 11, 1986.

11. Hydraulic Conductivity of Geologic materials, Federal Register, Vol. 55, No. 241, p. 51601, December 14, 1990.

12. Telecon Note: Conversation between Mike Sferruzzo, Garfield Water Department, and Frederick V. Loneker, Malcolm Pirnie, Inc., February 6, 1992.

13. Telecon Note: Conversation between Tony Berkhout, Fair Lawn Water Department, and Frederick V. Loneker, Malcolm Pirnie, Inc., February 6, 1992.

14. Telecon Note: Conversation between Jim Schaffer and Frederick V. Loneker, both of Malcolm Pirnie, Inc., February 27, 1992.

15. Project Note: Frederick V. Loneker, Malcolm Pirnie, Inc. to Aetna Chemical Corp. File, Subject: Drinking Water Supply -- 4-Mile Radius, March 13, 1992.

16. Project Note: Frederick V. Loneker, Malcolm Pirnie, Inc., to Aetna Chemical Corporation File, Subject: Groundwater Usage Ring Population Apportionments, February 27, 1992.

17. Telecon Note: Conversation between Dan Van Abs, NJDEP Bureau of Water Supply Planning, and K. Campbell, Halliburton NUS Environmental Corporation, February 14, 1992.

18. Telecon Note: Conversation between Bob Brightly, Boswell & McClave Engineers, and Frederick V. Loneker, Malcolm Pirnie, Inc., February 3, 1992.

19. Telecon Note: Conversation between Tom Skrabel, Boswell Engineering, and Frederick V. Loneker, Malcolm Pirnie, Inc., February 6, 1992.

20. Project Note: Frederick V. Loneker, Malcolm Pirnie, Inc., to Aetna Chemical Corporation File, Subject: Surface Water Pathway, January 7, 1992.

21. General Sciences Corporation, Personal Computer Version of the Graphical Exposure Monitoring System (PCGEMS), Landover, Maryland, April 1990.

22. Telecon Note: Conversation between Bob Papson, NJDEP Fisheries Bureau, and Lisa Szegedi, Malcolm Pirnie, Inc., March 4, 1992.

23. Water Resources Data - New Jersey Water Year 1990, Vol. 1. Surface-Water Data, U. S. Geologic Survey Water-Data Report NJ-90-1.

24. Superfund Chemical Data Matrix (SCDM), U.S. EPA, November 1, 1991.

25. Letter from Thomas F. Breden, Coordinator/Ecologist, Natural Heritage Program, to Frederick V. Loneker, Malcolm Pirnie, Inc., March 10, 1992.

26. Telecon Note: Conversation between Don Kroeck, NJDEP, Division of Surface Water Quality, and Lisa Szegedi, Malcolm Pirnie, Inc., February 27, 1992.

27. Letter from Vincent J. Sorce Jr., Aetna Chemical Corporation, to John D. Rieckhoff, Malcolm Pirnie, Inc., March 25, 1992.

28. Site Inspection, Aetna Chemical, Elmwood Park, Bergen County, EPA I.D. No. NJD001471374, NJDEP-HWM, April 19, 1990.

REFERENCE NO. 1

EVENTS: ALL

EPA ID NO.	SITE NAME / STREET / CITY / COUNTY CODE AND NAME	STATE	ZIP CODE DIST.	OPRBLE UNIT	EVENT TYPE	NFA FLAG	ACTUAL START DATE	ACTUAL COMPL DATE	CURRENT EVENT LEAD
NJD980530133	AEROHAVEN AIRPORT			00	DS1			06/01/81	EPA (FUND)
	KETTLE RUN ROAD				PA1		09/15/87	09/16/87	STATE(FUND)
	EVESHAM TWP	NJ	08053		SI1		03/31/89	06/29/89	EPA (FUND)
	005 BURLINGTON								
NJD001471374	AETNA CHEMICAL CORPORATION			00	DS1			06/27/86	STATE(FUND)
	WALLACE STREET				PA1			06/30/86	STATE(FUND)
	ELMWOOD PARK	NJ	07470		SI1		03/28/91	05/21/91	STATE(FUND)
	031 PASSAIC								
NJD980530252	AGRICO CHEMICAL CO			00	DS1			06/08/81	RESP. PARTY
	LIEBIG LANE				PA1			09/01/84	EPA (FUND)
	CARTERET	NJ	07008		SI1		03/28/88	03/31/88	STATE(FUND)
	023 MIDDLESEX								
NJD980417257	AGWAY COUNTY FOODS			00	DS1			10/01/79	EPA (FUND)
	407 STATE STREET				PA1	NFA	07/01/84	09/01/84	EPA (FUND)
	ELMER	NJ	08318						
	033 SALEM								
NJD981081452	AIR PRODUCTS & CHEMICAL INC			00	DS1			06/01/81	EPA (FUND)
	172 DAEKELAND AVE				PA1			11/01/83	EPA (FUND)
	MIDDLESEX	NJ	08846		SI1	NFA	07/01/91	09/25/91	EPA (FUND)
	023 MIDDLESEX								
NJD002373579	AIR PRODUCTS & CHEMICAL INC			00	DS1			05/06/80	STATE(FUND)
	HILLINGSPORT RD				PA1			04/01/84	STATE(FUND)
	GREENWICH TWP	NJ	08066		SI1	NFA	01/01/91	03/26/91	EPA (FUND)
	015 GLOUCESTER								
NJD001732060	AIR PRODUCTS & CHEMICALS			00	DS1			12/01/79	EPA (FUND)
	1680 OAK TREE RD				PA1			01/01/80	EPA (FUND)
	WOODBRIDGE TWP	NJ	07095		PA2	NFA	05/01/89	06/22/89	STATE(FUND)
	023 MIDDLESEX				SI1		06/01/81	11/01/81	EPA (FUND)
NJD980530422	AIRCO INC/ FRANKLIN TWP LABORATORY			00	DS1			06/01/81	EPA (FUND)
	HOWARD AVE				PA1			06/01/84	STATE(FUND)
	FRANKLIN TWP	NJ	08873		SI1		01/01/90	03/30/90	EPA (FUND)
	035 SOMERSET								

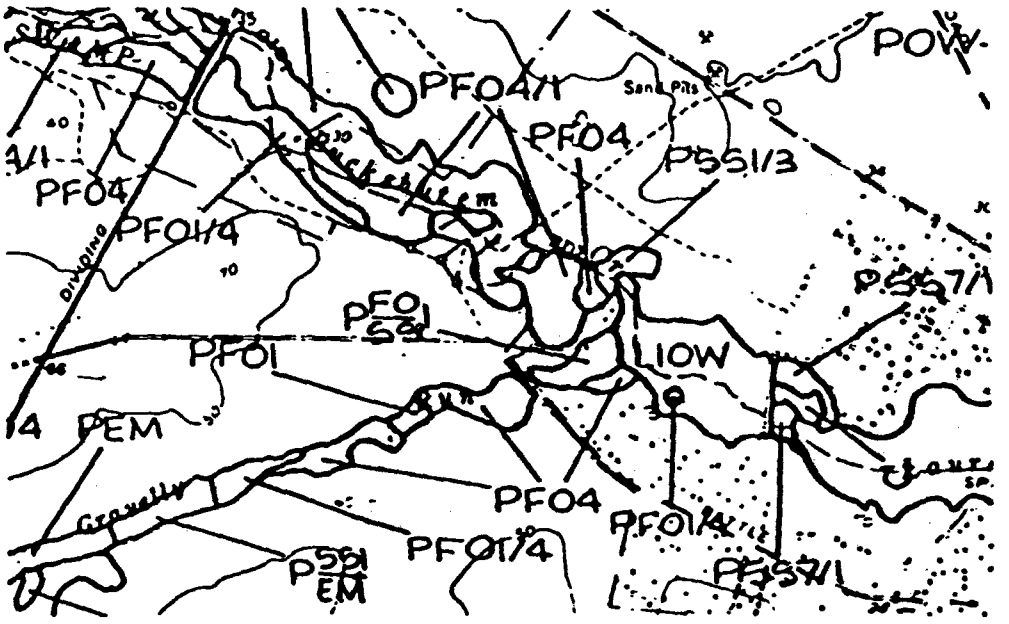
REFERENCE NO. 2

WELL IDENTIFICATION KEY	
OWNER	WELL NUMBER
CITY OF GARFIELD	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
BOROUGH OF FAIR LAWN	17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29

TITLE:	FOUR MILE VICINITY MAP
SITE NAME:	AETNA CHEMICAL CORPORATION ELMWOOD PARK, N.J.
DATE: 03/31/92	SCALE: 1" = 2000'
REPORT NUMBER:	8002- 45-1
USGS TOPO NAME:	HACKENSACK, N.J.

REFERENCE NO. 3

ATLAS
OF
NATIONAL WETLANDS INVENTORY MAPS
FOR
NEW JERSEY



PORTION OF DIVIDING CREEK MAP SCALE: 1:24,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Region Five
Habitat Resources
One Gateway Center, Suite 700
Newton Corner, Massachusetts

1984

TABLE 1. GENERAL CHARACTERISTICS OF SYSTEMS

SYSTEM (MAP CODE)	DESCRIPTION
Marine (M)	Open ocean and its high energy shoreline; salinity > 30 ppt*
Estuarine (E)	Tidal ecosystems, usually semi-enclosed by land, with varying salinities
Riverine (R)	Freshwater flowing water contained within a channel; salinity <0.5 ppt
Lacustrine (L)	Fresh waterbodies, generally >20 acres, >2 meters deep at low water
Palustrine (P)**	Mostly freshwater wetlands; and waterbodies <20 acres and <2 meters deep at low water.

ppt = parts per thousand

***Examples of this system are ponds, freshwater swamps, marshes and bogs.*

TABLE 2. GENERAL CHARACTERISTICS OF SUBSYSTEMS*

SUBSYSTEM (MAP CODE)	DESCRIPTION	RELEVANT SYSTEMS
Subtidal (1)	Permanently flooded (below mean low tide level)	Marine,Estuarine
Intertidal (2)	Periodically flooded and exposed by tides	Marine,Estuarine
Tidal (1)	Fresh water, tidally influenced river	Riverine
Lower Perennial (2)	Slow-moving river, with low gradient, and well developed floodplain	Riverine
Upper Perennial (3)	Fast moving river with high gradient and little floodplain development	Riverine
Intermittent (4)	Seasonally flowing river	Riverine
Unknown (5)	River sharing characteristics of other subsystems	Riverine
Limnetic (1)	Lake water greater than 2 meters deep	Lacustrine
Littoral (2)	Shallow lake water and adjacent shoreline, less than 2 meters deep	Lacustrine

**NOTE: There are no Subsystems in Palustrine system..*

TABLE 3. GENERAL CHARACTERISTICS OF THE CLASSES

CLASS (MAP CODE)	DESCRIPTION
Rock Bottom (RB)	Permanently flooded bedrock or large chunks of bedrock
Unconsolidated Bottom (UB)*	Permanently flooded sand, gravel, mud or cobble substrate
Unconsolidated Shore (US)	Periodically exposed sand, mud or gravel substrate
Aquatic Bed (AB)	Floating or floating-leaved submerged aquatic vegetation (e.g., duckweed, pondweed, algae)
Reef (RF)	Substrate composed of living organisms (e.g. mussels, oysters)
Rocky Shore (RS)	Periodically exposed bedrock or large chunks of bedrock
Open Water (OW)*	Open water, no visible vegetation
Streambed (SB)	Periodically flooded channel composed of gravel, sand or bedrock
Emergent Wetland (EM)	Herbaceous (non-woody) vegetation (e.g., grasses, sedges, rushes and flowering herbs)
Scrub/Shrub Wetland (SS)	Woody vegetation < 20 feet tall (includes dwarf trees in bogs, shrubs and saplings)
Forested Wetland (FO)	Woody vegetation 20 feet or taller (trees)
Moss/Lichen Wetland (ML)	Dominant vegetative cover of mosses, lichens or both

**Earlier NWI maps used the Open Water (OW) class, while present mapping conventions use the Unconsolidated Bottom (UB) class.*

TABLE 4. TIDAL WATER REGIMES (used for Marine and Estuarine systems where salinities > 0.5 ppt)

WATER REGIME (MAP CODE)	DESCRIPTION OF WATER REGIME
Subtidal (L)	Permanently flooded by tides all year long
Irregularly Exposed (M)	Flooded most times except extreme low tides
Regularly Flooded (N)	Flooded and exposed by tides at least once daily
Irregularly Flooded (P)	Flooded less often than once daily by tides

TABLE 5. NONTIDAL WATER REGIMES (used for Riverine, Lacustrine, Palustrine Systems)

WATER REGIME (MAP CODE)	DESCRIPTION OF WATER REGIME
Temporarily Flooded (A)	Floods most years for less than two weeks during growing season; usually dry by mid-growing season
Saturated (B)	Substrate is saturated for most of growing season (commonly year round) and rarely floods
Seasonally Flooded (C)	Floods most years for two weeks or more during growing season, usually dry by end of growing season
Seasonally Flooded/Saturated (E)*	Floods most years for two weeks or more during growing season and remains saturated near the surface for most of the growing season
Semipermanently Flooded (F)	Remains flooded throughout the growing season in most years
Intermittently Exposed (G)	Nearly permanently flooded, exposed only during drought conditions
Permanently Flooded (H)	Remains flooded throughout the year in all years
Intermittently Flooded (J)	Exposed most years, but flooded(usually briefly) during growing season on an irregular basis
Artificial (K)	Flooding controlled by pumps, siphons, etc.

**Not used on all maps*

TABLE 6. FRESHWATER - TIDAL. These areas have freshwater (having salinities of <0.5 ppt) that fluctuates with tidal movements.

WATER REGIME (MAP CODE)	DESCRIPTION OF WATER REGIME
Temporarily Flooded-Tidal (S)	Floods most years less than two weeks during growing season, but also periodically inundated by freshwater tides*
Seasonally Flooded-Tidal (R)	Floods for two weeks or more during growing season, but also periodically inundated by freshwater tides*
Semipermanently Flooded-Tidal (T)	Remains flooded through most of growing season in most years and is affected by freshwater tides
Permanently Flooded-Tidal (V)	Remains flooded throughout the year in all years and is influenced by freshwater tides
Regularly Flooded-Tidal (N)**	Flooded and exposed at least once daily by freshwater tides

**Periodically inundated means flooded less than once daily by freshwater tides*

***This tidal (salt water) modifier is also used in the Lacustrine, Palustrine, and Riverine systems to describe the water regime of freshwater areas that are flooded (regularly) at least once daily by freshwater tides.*

TABLE 7. COMMONLY USED MODIFIERS

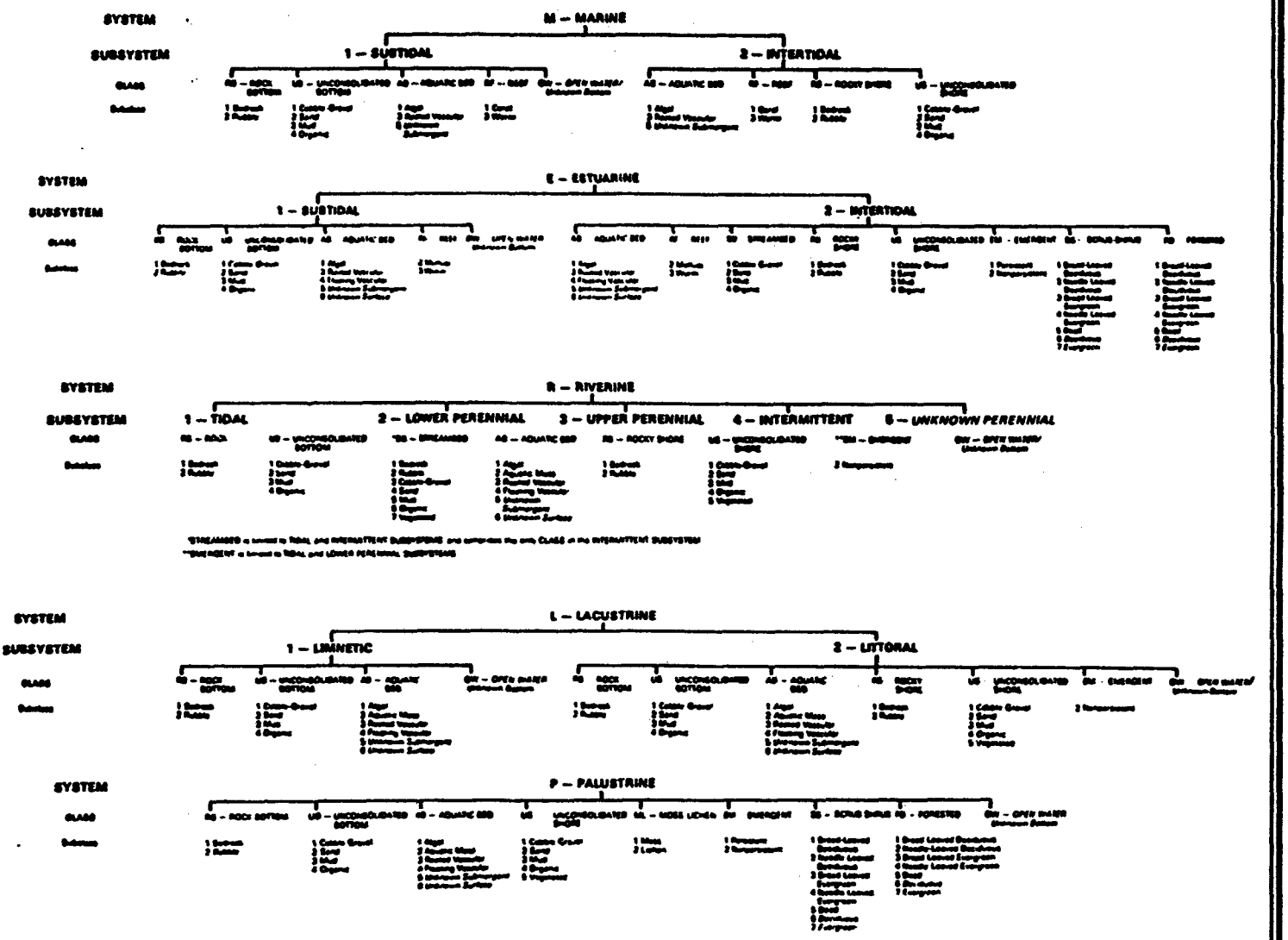
MODIFIER (MAP CODE)	GENERAL DESCRIPTION
Oligohaline (6)	Used to distinguish transitional zone (slightly brackish) between freshwater tidal systems and brackish tidal systems; salinity = 0.5-5.0 ppt
Acid (a)	Used to distinguish floating mat, kettlehole type acidic bogs from other non-acidic wetland types
Beaver (b)	Used to indicate an area that has been either created by, or hydrologically affected by beaver dams
Partially ditched/drained (d)	Used to show an area that has been visibly ditched or partially drained, but maintains wetland hydrology and functions
Farmed (f)	Used in this region (Northeast) to identify commercial cranberry bogs
Artificial (r)	Used to identify manmade impoundments with artificial bottoms (i.e., concrete fish ponds, sewage treatment ponds); also used to identify wetlands created by bench mining of coal
Diked/Impounded (h)	Used to identify areas that have been hydrologically altered or created by construction of a dike or dam which obstructs or stops water flow
Excavated (x)	Created or modified by excavation and removal of existing substrate (i.e., quarries, gravel pits, farm ponds, channelized rivers, drainage ditches)

TABLE 8. QUICK CROSS REFERENCE OF MAP CODES TO COMMON WETLAND TYPES (Using System, Subsystem and Class)

MAP CODE	COMMON NAME or WETLAND TYPE
PFO	FORESTED OR WOODED SWAMP OR BOG
PSS	SHRUB SWAMP OR BOG
PEM	EMERGENT MARSH, FEN, OR WET MEADOW
PUB	POND
PUS	POND SHORELINE
PAB	POND WITH FLOATING OR SUBMERGED AQUATIC VEGETATION (DUCKWEEDS, POND LILIES)
R1UB	FRESHWATER TIDAL RIVER
R2UB	SLOW MOVING RIVER WITH FLOODPLAIN
R2AB	RIVER WITH AQUATIC VEGETATION(PICKERELWEED)
R3US	BANK OR SHORELINE OF FAST FLOWING RIVER
R4SB	INTERMITTENT STREAM CHANNEL
R5UB	RIVER SHOWING CHARACTERISTICS OF BOTH UPPER AND LOWER PERENNIAL RIVERS
M1UB	OPEN OCEAN WITH UNCONSOLIDATED BOTTOM
M2AB	INTERTIDAL SEAWEED BED IN OCEAN
M2RF	INTERTIDAL OYSTER AND MUSSEL REEFS IN OCEAN
E2EM	SALT OR BRACKISH TIDAL MARSH
E2SS	ESTUARINE SHRUB SWAMP
E2US	ESTUARINE FLATS, BEACH, OR SAND BARS
E1UB	OPEN WATER ESTUARY
L1UB	DEEPWATER ZONE OF LAKE
L2US	LAKE SHORE OR SHALLOW WATER ZONE OF LAKE
L2AB	AQUATIC VEGETATION IN LAKE
L2UB	SHALLOW WATER ZONE OF LAKE

NWI MAP LEGEND

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION



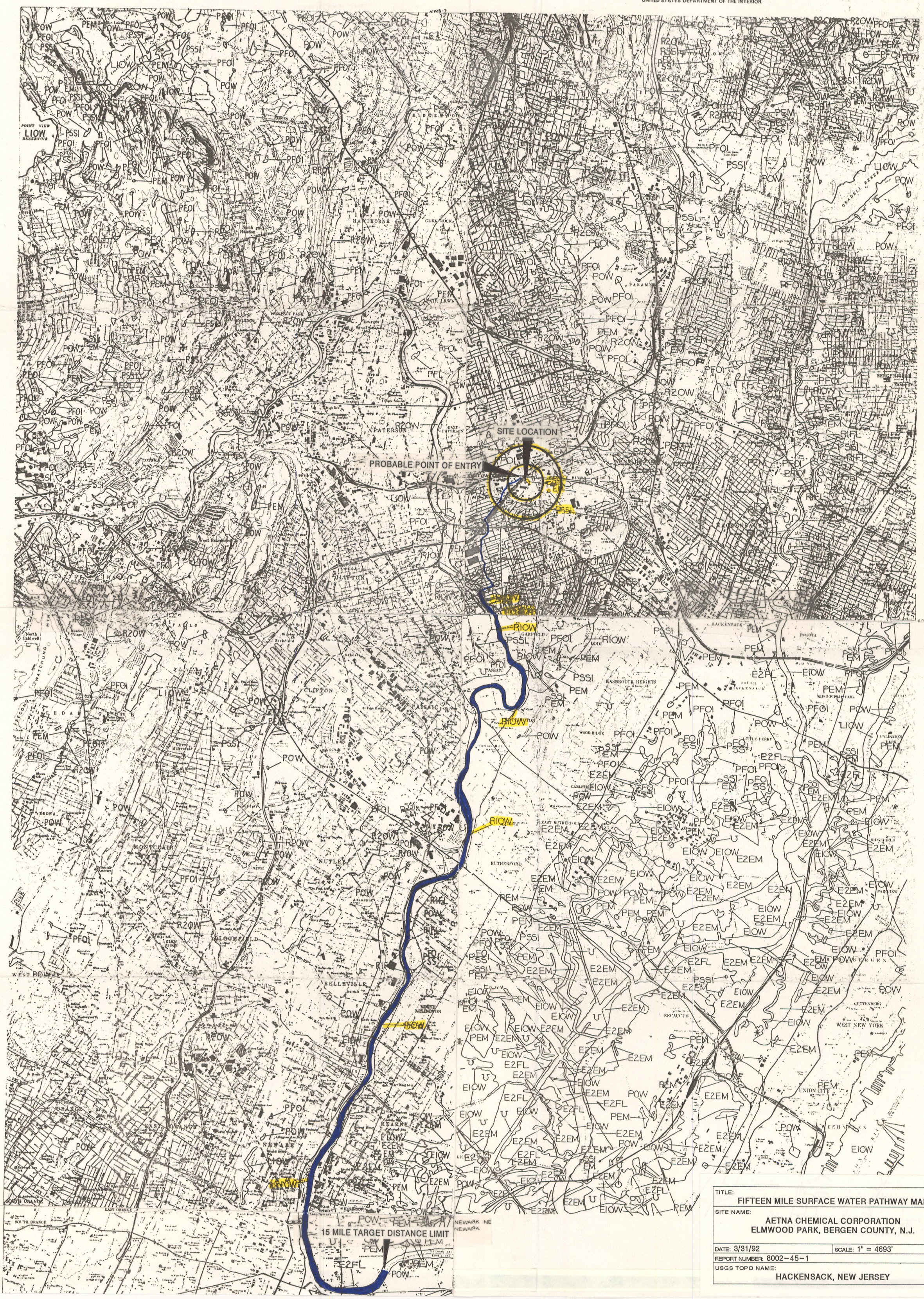
MODIFIERS

WATER REGIME		WATER CHEMISTRY		SOIL	SPECIAL MODIFIERS
Non-Tidal	Tidal	Coastal Salinity / Inland Salinity	pH Modifiers for all Fresh Water		

(FOUND AT THE BOTTOM OF EACH NWI MAP)

NATIONAL WETLANDS INVENTORY
UNITED STATES DEPARTMENT OF THE INTERIOR

NATIONAL WETLANDS INVENTORY
UNITED STATES DEPARTMENT OF THE INTERIOR



TITLE:
FIFTEEN MILE SURFACE WATER PATHWAY MAP

SITE NAME:
AETNA CHEMICAL CORPORATION
ELMWOOD PARK, BERGEN COUNTY, N.J.

DATE: 3/31/92 | SCALE: 1" = 4693'

REPORT NUMBER: 8002-45-1

USGS TOPO NAME:
HACKENSACK, NEW JERSEY

REFERENCE NO. 4

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

BOROUGH OF
ELMWOOD PARK, NEW JERSEY
BERGEN COUNTY

ONLY PANEL PRINTED

COMMUNITY-PANEL NUMBER
340500 0001 B

MAP REVISED:

FEBRUARY 26, 1982

federal emergency management agency
federal insurance administration

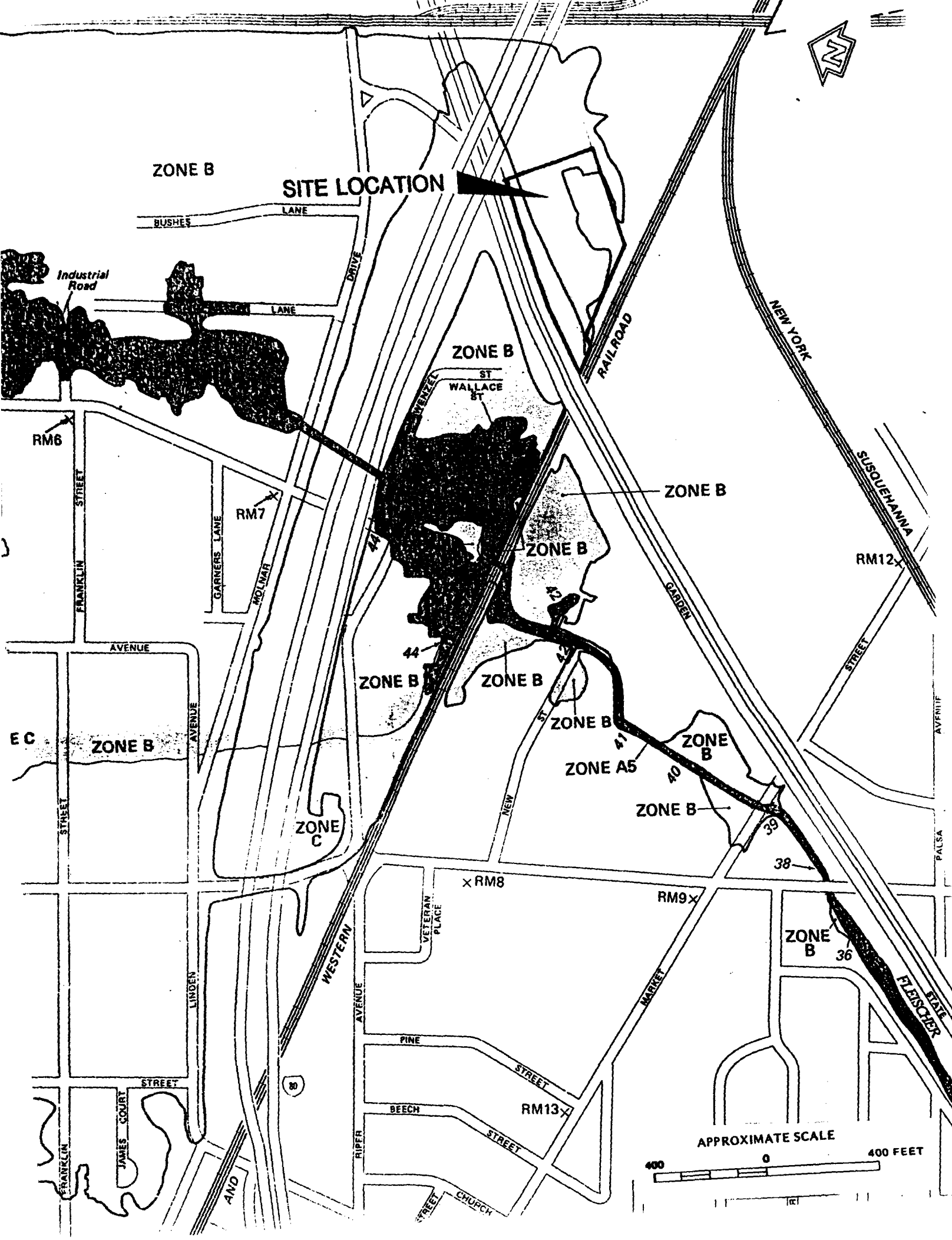
KEY TO MAP

500-Year Flood Boundary	ZONE B
100-Year Flood Boundary	
Zone Designations*	
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.



ZONE B
SITE LOCATION
BUSHES
LANE
Industrial Road
LANE
DRIVE
ZONE B
WENZEL
ST
WALLACE ST
RAILROAD
NEW YORK
SUSQUEHANNA
RM6
RM7
FRANKLIN
STREET
GARNERS LANE
MOLNAR
ZONE B
ZONE B
44
42
RM12
GARDEN
STREET
AVENUE
44
ZONE B
ZONE B
42
ZONE B
ZONE B
ZONE B
41
ZONE A5
40
ZONE B
39
38
E C
ZONE B
AVENUE
STREET
ZONE C
NEW
ST
PALSA
AVENUE
RM8
RM9
VETERAN PLACE
ZONE B
36
WESTERN
LINDEN
AVENUE
MARKET
FLEISCHER
STATE
PINE
STREET
80
STREET
BEECH
STREET
RM13
JAMES COURT
FRANKLIN
RIPER
AND
CHURCH
STREET
APPROXIMATE SCALE
400
0
400 FEET

REFERENCE NO. 5

THE WHITMAN Companies, INC.

385 Highway 18
Ferris Plaza, Building H
East Brunswick, N.J. 08816
(201) 390-5858
Fax: (201) 390-9496

June 25, 1991

Mr. Arnold Schiff
Principal Environmental Specialist
Metro Regional Office
New Jersey Department of Environmental Protection
Division of Hazardous Waste Management
2 Babcock Place
West Orange, NJ 07052

Re: Aetna Chemical Corporation
Project #91-05-02
Remedial Investigation Plan

Dear Mr. Schiff:

As a result of our recent phone conversation, we are submitting to you this addendum to the Remedial Investigation Plan of June 6, 1991.

STORAGE TANKS

As you requested a list of tank contents is shown below. Specific tank locations and tank contents will be included in the Remedial Investigation Report.

Southern Tank Area (Undiked)

93% Sulfuric Acid - 4,000 Gallons
67% Nitric Acid - 4,000 Gallons
32% Hydrochloric Acid - 12,000 Gallons
Fuel Oil Additive - 25,000 Gallons
Empty

Northern Tank Area (Inside Dike)

Toluene
Xylene
Isopropyl Alcohol
1,1,1 Trichloroethane
Mineral Oil
Mineral Spirits
Methanol
9% Manganese Sulfonate
Fuel Oil Additive

The WHITMAN Companies, Inc.

Note: Tanks are compartmentalized into 5,000 units. There are 4 tanks of 15,000 gallons (3 units each) and 1 tank of 10,000 gallon (2 units).

SAMPLE ANALYSIS OF SOIL

A minimum of 20% of the samples with the highest Volatile Organic Compound (VOC) reading taken during the headspace analysis will be submitted to a state certified laboratory for GC/MS analysis for Volatile Organics using EPA Method 624. Soil samples for VOC will be taken at a depth of 18-24 inches. More than 20% of the samples may be analyzed for VOC depending on field conditions.

Six soil samples are proposed to be taken and analyzed for Base Neutral Extractables (BN+15), Priority Pollutant Metals and Petroleum Hydrocarbons. These samples will be at a depth of 6-12 inches. Sample locations are as shown in Figure 1 of the June 6th submission.

Additional soil samples at 6-12 inches may be taken at other site locations depending on field conditions. Petroleum Hydrocarbons will be analyzed on these samples.

If you should have any questions, please give me a call at (908) 390-5858.

Very truly yours,

Andrew D. Soos
Senior Environmental Engineer

ADS/az

cc: R. Baldanzi, Aetna Chemical Corporation
L. Goldshore, Esq., Goldshore, Wolf & Lewis

THE WHITMAN Companies, INC.

385 Highway 18
Ferris Plaza, Building H
East Brunswick, N.J. 08816
(201) 390-5858
Fax: (201) 390-9496

FACSIMILE COVER LETTER

FAX NUMBER (908) 390-9496

PHONE NUMBER (908) 390-5858

DATE SENT: 7/3/91

TIME SENT: 10:06 AM

TO: Arnold Schiff

FROM: Andy Sous

RE: Aetna Addendum

TOTAL NUMBER OF PAGES INCLUDING COVER SHEET: 3

CONFIRMATION REQUESTED: YES _____ NO X

_____ IF TRANSMISSION IS INCOMPLETE,
PLEASE CALL (908) 390-5858

As we discussed today

02-11-24

THE WHITMAN Companies, INC.

RECEIVED
JUN 06 1991

385 Highway 18
Ferris Plaza, Building H
East Brunswick, N.J. 08816
(201) 390-5858
Fax: (201) 390-9496

June 6, 1991

Mr. Arnold Schiff
Principal Environmental Specialist
Metro Regional Office
New Jersey Department of Environmental Protection
Division of Hazardous Waste Management
2 Babcock Place
West Orange, New Jersey 07052

RE: Aetna Chemical Corporation
Project #91-05-02
Remedial Investigation Plan and Conceptual Discharge Prevention Plan Proposal

Dear Mr. Schiff:

On behalf of Aetna Chemical Corporation of Elmwood Park, New Jersey, we are submitting to you the attached Remedial Investigation Plan. This submittal is in response to your letter dated January 22, 1991 to Aetna Chemical.

Enclosed is a proposed remedial investigation which includes both headspace analysis and soil sample analysis. Thirty sampling points have been identified.

Upon your review of the attached proposal, please call me or Dr. Ira L. Whitman, P.E. to discuss the contents. Aetna is prepared to proceed with the remedial investigation upon your approval.

Very truly yours,

Andrew D. Soos
Senior Environmental Engineer

ADS/rw

Attachment

cc: L. Goldshore, Goldshore, Wolf & Lewis
R. Baldanzi, Aetna Chemical

REFERENCE NO. 6

HWM 0010
1/90

New Jersey Department of Environmental Protection
Division of Hazardous Waste Management
2 Babcock Place
West Orange, N.J. 07052
(201) 669-3960

NOTICE OF VIOLATION

ID NO._____ DATE 6/25/90

NAME OF FACILITY Aetna Chemica Co

LOCATION OF FACILITY Wallace St. Elmwood park

NAME OF OPERATOR Robert Balbanzi President

You are hereby NOTIFIED that during my inspection of your facility on the above date, the following violation(s) of the Solid Waste Management Act, (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.) promulgated thereunder and/or the Spill Compensation and Control Act, (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.) promulgated thereunder were observed. These violation(s) have been recorded as part of the permanent enforcement history of your facility.

DESCRIPTION OF VIOLATION N.J.S.A. 58:10-23.11(c) Discharge of hazardous substances (specifically petroleum hydrocarbons and Hydrochloric Acid) N.J.S.A 58:10-23.11(e) non-notification of said discharge

Remedial action to correct these violations must be initiated immediately and be completed by July 10, 1990. Within fifteen (15) days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey, or any of its agencies from initiating further administrative or legal action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are punishable by penalties of $50,000 per violation.

Arnold Senff

Investigator, Division of Hazardous Waste Management
Department of Environmental Protection

REFERENCE NO. 7

Form DEP-061 C

07/11

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DUTY OFFICER NOTIFICATION REPORT

CASE NO. 91 - 05 - 08 - 0830 (Yr) (Mo) (Day) (Time)

DATE 05 - 08 - 91 (Mo) (Day) (Yr) REC'D BY CARM/BLK TIME 0828

INCIDENT REPORT BY:
Name Bob Windsor Phone (201) 228-4846
Street 16 Washington St
City Cambridge Mass. State
Affiliation/Title Robinson Chem

INCIDENT LOCATION: ___ Transportation ___ Facility ___ Other:
Name (Site): AETNA Chem Phone ~~(201) 796-0700~~
Street Wallace Rd
City Elmwood Pk County Bergen State Zip Code
Date of Incident: 05 - 08 - 91 (Mo) (Day) (Yr) Time: 0815

IDENTITY OF SUBSTANCE(S) SPILLED, RELEASED, ETC.: ___ Suspected ___ Unknown
Name of Substance(s) [Gas, Liquid, Solid]: Hydrogen Peroxide
Amount Released/Spilled 55gal ___ Actual ✓ Potential ___ Estimated Substance Contained Y (N) U
Type of Release/Spill: ___ Terminated ✓ Continuous ___ Intermittent Hazardous Material (Y) N U

INCIDENT DESCRIPTION:
___ Fire ___ Explosion ___ Air Rel ✓ Spill ___ MVA ___ Derailment ___ Smoke/Dust
___ Odors ___ Sewage ___ NJPDES ___ Noise ___ Wildlife ___ Illegal Dumping ___ Drums
___ Equip Start-Up/Shutdown, Equip Fail/Upset, etc.
___ Other (specify)

Injuries Y (N) U
Facility Evacuation Y (N) U
Population Evacuation Y (N) U
Potable Water Source Y (N) U
Contamination of ___ Air ✓ Land ___ Water
Receiving Water None
Public Exposure Y (N) U
Fire Department at Scene (Y) N U
Police at Scene (Y) N U
Assistance Requested Y (N) U
Precipitation Y N U
Wind Direction/Speed /
Location Type: ___ Residential ___ Industrial ___ Commercial ___ Rural ___ Sensitive Population (Hosp., School, Nurs. Home)
STATUS AT INCIDENT SCENE drums leaking in trailer

RESPONSIBLE PARTY: ___ Suspected ___ Unknown
Company Name AETNA Chem Phone
Contact Title
Street
City County State Zip Code

OFFICIALS NOTIFIED (Name/Title):
NJSP: / Phone Date/Time / (T/M)
Local Health: / Phone Date/Time / (T/M)
Local Munic: / Phone Date/Time / (T/M)
USEPA: / Phone Date/Time / (T/M)

INCIDENT REFERRED TO:
___ DEQ ___ DWR ___ DSWM ___ DHSM ✓ DHWM ___ DOH ___ DFG ___ DPF ___ DCJ ___ DCR
Region: ___ Northern ✓ Metro ___ Central ___ Southern ___ ER1 ___ ER2 ___ BUST
1. Name/Affil / Phone Date/Time / (T/M)
2. Name/Affil / Phone Date/Time / (T/M)
3. Name/Affil / Phone Date/Time / (T/M)

DEP RESPONSE Emergency Immediate Priority (No Response)

COMMENTS 0832 (201) 796-0700 to BALICA - Elmwood Park
one 55gal drum - inside 48' Rail car. 0835
Notified Sgt. Pennitt BCOEM will phone back w/update
0930 update from Sgt. Webber material was spilled on

COPIES: White - Lead Agency Yellow - Other Pink - Other

Form DEP-081 B
3/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DUTY OFFICER UPDATE LOG

CASE NO. 91 - 05 - 08 - 0823
(Yr) (Mo) (Day) (Time)

TIME	UPDATE/COMMENTS
0930	- cont - roadway - small amount material
	has reacted + will be cleaned up - BTO
	NFA - No BER Response

Copies: White - Lead Agency Blue - Comm. Center Pink - A310 Goldenrod - Other

New Jersey Department of Environmental Protection
COMMUNICATIONS CENTER NOTIFICATION REPORT

Received: 5/08/91 TD Log # 629[illegible]
Operator: [illegible] Case # 91-5-8-0823-21

Notification Type: Facility

Reported By	Affiliation	Phone
BOB WINDSOR	ROBBINSON CHEMICAL	301-228-4846
Street Address	**Municipality**	**State**
16 WASHINGTON ST.	CAMBRIDGE	MD

Incident Location: Facility

Site AETNA CHEMICAL Phone

Street Address	Municipality	County	State
WALLACE RD	ELMWOOD PARK	BERGEN	NJ

Location Type Industrial Incident Date 5/08/91 Time 0815

Substance Released HYDROGEN PEROXIDE
Amount Released (Estimate) 55 GALLON
ID:Known State Liquid CAS# 7722841 Release Is Continuous
Additional Substances
Substance Contained? N Hazardous Material? Y TCPA? N A310 Letter? Y
COMU CODE: 0211 REF CODE: 001

Incident Description Spill

Injuries? N Public Evac? N Facility Evac? N Public Exposure? N
Police On Scene? N Firemen On Scene? Y DEP Requested? N Wind Sp/Dir

Contamination Of Land Receiving Water NONE
Factors At Scene REPORTED PRODUCT LEAKING FROM CONTAINER IN TRAILOR COMPARTMENT.

Responsible Party Known
Party ROBBINSON CHEMICAL Phone 301-228-4846
Contact BOB WINDSOR Title DISP COMPL.

Street Address	Municipality	County	State
16 WASHINGTON ST.	CAMBRIDGE		MD

OFFICIALS NOTIFIED

NAME	TITLE	PHONE	DATE	TIME
		609-882-2000	5/08	
ELM PARK BORO	LT. FELICA	201-796-0700	5/08	0832

Name	Affiliation		Method	Date	Time	T/M
[illegible]	DEQ	ERI	Office,Faxed	5/08	0829	T

COMMENTS

REFERENCE NO. 8

MALCOLM PIRNIE, INC. PROJECT NOTE

To: AETNA CHEMICAL CORPORATION FILE Date: 3/19/92
From: FREDERICK V. LONEKER Project Number: 8002-45-1
Subject: DATA SUMMARY SHEET Site Name: AETNA CHEMICAL CORP.

ATTATCHED IS A DATA SUMMARY SHEET FOR THE ANALYTICAL RESULTS OF THE ~~1985~~ 1990 FEDL-3/17/92 SITE INSPECTION SAMPLING EVENT. DATA WAS COMPILED FROM ANALYTICAL RESULTS PROVIDED IN THE SI REPORT. ONLY DATA THAT DID NOT REQUIRE QUALIFICATION WAS USED IN PREPARING THE TABLE.

FRED LONEKER

DATA SUMMARY SHEET – AETNA CHEMICAL CORPORATION

CONTAMINANT	SOIL SAMPLES										SED. SAMPLES	
	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10	SED-1	SED-2
											Upstream	Downstream
VOLATILES												
Acetone								1,800	130			
1,1 – Dichloroethene										14,000		17
1,1 – Dichloroethane								2,500				
1,2 – Dichloroethene												
1,1,1 – Trichloroethane	310	4,800	27,000,000				4,600	370,000	280		11	86
Carbon Tetrachloride										17,000		
Xylenes	810	7,700	9,800,000	240,000	11,000	2,000	3,600	320,000	840	4,700		
Styrene		3,900										
4 – Methyl – 2 – Pentanone	61											
Tetrachloroethene					760				18			
Toluene	72		770,000	82,000	750			170,000	23	110,000		
Ethylbenzene	42		100,000	28,000	1,600			18,000	100	71,000		
SEMI-VOLATILES												
Naphthalene	27,000		810,000		1,200	12,000		240,000	790			22,00[illegible]
2 – Methylnaphthalene	290,000	150,000	1,700,000		6,600	34,000		1,300,000	2,000			58,00[illegible]
Acenaphthene						1,400		38,000				1,20[illegible]
Fluorene					610	1,800		67,000				1,50[illegible]
Phenantrene	40,000		34,000		1,800	5,200		140,000	380			2,50[illegible]
Anthracene						540						
Di – n – butylphthalate					440	390						
Fluoranthene					1,100	1,500		44,000	420			1,80[illegible]
Pyrene					1,500	2,400		38,000	540			3,40[illegible]
Butylbenzylphthalate						530						
Benzo (a) anthracene					520	650			500			1,00[illegible]
Chrysene					690	940			502			1,40[illegible]
bis(2 – Ethylhexyl) phthalate		25,000		47,000	5,000	5,000	94,000	120,000	7,200	66,000	140	25,00[illegible]
Di – n – octylphthalate												45[illegible]
Benzo (b) fluoranthene					440	630			1,100			1,50[illegible]
Benzo (a) pyrene						420			1,000			2,00[illegible]
Ideno (1,2,3 – cd) pyrene												1,10[illegible]
Benzo (g,h,i) perylene									2,500			7,80[illegible]
METALS												
Aluminum	7,130,000	4,330,000	603,000	527,000	453,000	715,000	4,150,000	6,030,000	11,800,000	300,000	8,960,000	8,830,00[illegible]
Arsenic		4,600	2,700	2,700	6,000		2,100		13,600	2,500		4,10[illegible]
Barium	1,120,000	6,000,000	5,500,000	121,000	101,000	278,000	466,000	500,000	2,070,000	64,400	2,800	1,810,00[illegible]
Cadmium	1,300	2,500					1,300	1,900	4,200			2,90[illegible]
Calcium		5,310,000					5,970,000	11,400,000	8,480,000			4,850,00[illegible]
Chromium	10,600	49,800	17,100				19,300	22,000	90,000	4,800	15,300	211,00[illegible]
Cobalt		12,100										
Copper	18,000	58,700	18,300				32,100	19,600	113,000	7,600	17,600	187,00[illegible]
Iron	10,100,000	17,500,000	10,100,000	7,720,000	4,190,000	5,570,000	49,100,000	13,800,000	46,300,000	8,160,000	40,600	22,00[illegible]
Lead	1,250,000	13,500,000	609,000	35,100	60,500	49,200	181,000	186,000	1,580,000	28,600	25,800	2,500,00[illegible]
Magnesium	1,410,000						3,090,000	8,360,000	4,710,000		1,290,000	2,510,00[illegible]
Manganese	841,000	4,890,000	56,000	33,800	13,100	22,300	1,710,000	9,240,000	1,460,000	36,000	86,300	369,00[illegible]
Mercury	180	210	270	180	110		190	130	1,200	120		61[illegible]
Nickel		15,600					14,100	11,000	30,800		15,600	
Silver					2,700		3,600					4,00[illegible]
Vanadium	22,700	21,600					15,500	20,600	56,400		31,600	26,30[illegible]
Zinc	28,600	319,000	42,500	6,200			118,000	119,000	403,000	10,100	23,300	252,00[illegible]
Cyanide			3,700			640				850		

REFERENCE NO. 9

02-11-24

COPY

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
Metro Regional Office
2 Babcock Place, West Orange, N.J. 07052
(201) 669-3960

January 22, 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 258 818 227

Robert Baldanzi
Aetna Chemical Company
Wallace Street Extention
Elmwood Park, New Jersey 07407

Dear Mr. Baldanzi:

Based upon samples obtained on April 19, 1990 and visual observation June 25, 1990 and December 3, 1990 the Department is formally requesting that your company conduct a remedial investigation delineating both the vertical and horizontal extent of pollution at the site and present to the Department a remedial action plan to address the clean-up of the site.

If you have any questions concerning the above referenced request telephone Aronold Schiff at 201-669-3960.

Very Truly Yours,

Arnold Schiff

Arnold Schiff
Principal Environmental Specialist

AS:tg

New Jersey is an Equal Opportunity Employer
Recycled Paper

REFERENCE NO. 10

DRAFT 12/23/85
revision 04/11/86

Thomas H. Kean, Governor

Robert E. Hughey, Commissioner

Hydrogeology of the Triassic Rocks of the Newark Basin: Technical Notes and Guide to Field Trip in Central New Jersey

New Jersey Geological Survey

Open-File Report 86-__

by

Hugh F. Houghton

Department of Environmental Protection

Division of Water Resources

Bureau of Geology and Topography, DEP/DWR

CN 029

Trenton, New Jersey 08625

John W. Gaston, Jr., P.E., Director

Haig F. Kasabach, State Geologist

Objective:

The objective of the field trip is to examine in the best available outcrops, aspects of the stratigraphy, structure, petrology, and water-bearing characteristics of the Triassic age sedimentary rocks of the Newark rift basin in central New Jersey.

Stratigraphy:

There are three widely recognized sedimentary units of Late Triassic age in the Newark Basin: Stockton, Lockatong, and Brunswick Formations. In the Early Jurassic part of the section, there are three bedded volcanic units and three sedimentary units, comprising the former Watchung Basalts and upper part of the Brunswick Formation. This study will focus only on the pre-Jurassic sediments of the basin. The early Jurassic intrusive igneous rocks will be discussed at one of the field stops. The following discussion of stratigraphy includes all of the rock units of the Newark Basin.

The first comprehensive study of the stratigraphy of the Newark Basin was done by Kummel (1897, 1898), who named the three principal formations (Stockton, Lockatong, and Brunswick). Since 1977, the names of the Jurassic units have been under revision as a result of work done on pollen (Cornet,1977) and vertebrate fossils (Olsen,1980; Olsen and others,1982). The revised naming system was initially published in the Bulletin of the New Jersey Academy of Science and has been the subject of a mildly

heated disagreement among the USGS, the Pennsylvania GS, the NJGS, and Olsen. The nomenclature of Olsen has also appeared in the American Journal of Science (1982) and has gained general acceptance in academic usage. The general public, including engineers, environmental scientists, and planners, continues to use the old naming system which includes the now obsolete name "Brunswick Formation". The NJGS and Pennsylvania Geological Survey have strongly advocated the retention of the term "Brunswick" in the revised nomenclature, with only limited success. The present status of names for the Newark Basin rock units is given below.

TABLE 1
CURRENT NOMENCLATURE SCHEMES FOR THE NEWARK BASIN

Olsen, 1980	USGS Geologic Names Committee, 1985	NJGS, preferred usage, 1985	
	Brunswick Group:	Brunswick Formation	
Boonton Fm.	Boonton Fm.	Boonton Mbr.	
Hook Mt. Basalt	Hook Mt. Basalt	Hook Mt. Mbr.	
Towaco Fm.	Towaco Fm.	Towaco Mbr.	
Preakness Basalt	Preakness Fm.	Preakness Mbr.	
Feltville Fm.	Feltville Fm.	Feltville Mbr.	
Orange Mt. Basalt	Orange Mt. Basalt	Orange Mt. Mbr.	JURAS
.....	.....	.....	-----
Passaic Fm.	Passaic Fm. or "Brunswick Group, undivided"	Passaic Mbr. or "Brunswick Fm., undivided"	TRIAS
Lockatong Fm.	Lockatong Fm.	Lockatong Fm.	
Stockton Fm.	Stockton Fm.	Stockton Fm.	

In studying the applied geology and hydrology of the Triassic rocks, we only need to know about three main lithologic types. I will use the terms "Stockton", "Lockatong", and "Brunswick", as lithofacies associations (groups of distinct rock types), not as formation names.

Lithofacies:

Stockton- The Stockton association is dominated by coarse to medium sandstone, usually feldspar-rich, buff, pink, or red colored. The sandstones are river channel deposits and are invariably cross-bedded (usually low-angle troughs). Stacks of channel deposits tens of meters thick are common. The Stockton fluvial deposits are dominated by channel-flow facies.

Overbank and floodplain deposits of the Stockton are made up of red very fine-grained sandstone, siltstone, and mudstone. Floodplain deposits in the Stockton are virtually identical to the Brunswick floodplain facies. The key to identifying Stockton lithofacies is the presence of coarse, cross-bedded sandstone.

Area of occurrence: Stockton-type rocks are found in most of the area mapped as Stockton Formation. It also occurs widely throughout the northern Newark Basin in the area mapped as Brunswick Formation. Stockton lithofacies are also common in the "Feltville", especially in the upper half.

Lockatong- The base of the Lockatong is marked by the sudden appearance of grey to black siltstone beds. The setting in which the drab (green, grey, black) bedding sequences were deposited was lacustrine, in most

instances. Some of the lake margin facies are also drab-colored and were deposited in mudflat or delta environments). The grey lake sequences occur in discrete units which record the alternate filling and drying out of the lake basin. The rhythmic alternation from humid to arid climate conditions recorded in the Lockatong sequence has been described at great length by Van Houten (1962, 1964,) and by Olsen (1980, 1985).

Van Houten (1962) identified two fairly distinct types of lake cycles in the Lockatong. The differences between so-called "detrital" cycles and "chemical" cycles are many, but most are subtle and not easily seen in outcrop.

The most apparent difference is in thickness. Detrital cycles average 5 meters (17 feet) thick, while the average chemical cycle is only 3 meters (10 feet) thick. Each cycle has three divisions, although Van Houten only recognized two divisions, as shown on his 1962 figure (Fig.3a).

Studies by Olsen (1980a,1980b) in the Newark Basin, and Houghton (1984,1985) in the Culpeper Basin and in the lake beds of the Brunswick Formation show that lake sequences can be divided into three parts which record (1) transgression of fluvial and lake facies, (2) lake-bottom deposition, and (3) regression of lake facies. Division I usually begins with deposition of drab

sandstone beds (green to olive-tan most commonly) containing shallow-water sedimentary structures. During the next stage, the lake basin fills with water; the lake water is mostly fresh during "detrital" lake episodes and mostly saline during "chemical" lake depositional cycles. Filling of the lake basin is accompanied by the deposition of dark grey to black siltstone to claystone, generally thinly laminated (Division II). The second division corresponds with optimum trophic conditions in the lake: the water was at its peak of freshness (lowest salinity) and nutrient content. Division II beds vary in character, depending on how deep, fresh, and eutrophic the lake became during that particular climate cycle.

The upper part of lake cycles (Division III) records a drying out of the lake, with abundant mudcrack breccias, massive bioturbated siltstones, and often fine-grained sands or silts deposited in delta complexes which prograded over the dry lake plain. A modified version of Olsen's (1985) figure shows the three divisions of a typical detrital-type cycle (Fig. 3b).

An important aspect of the Lockatong facies, from the applied geology standpoint, is the occurrence of "argillite" beds. These are extremely hard, chemically-cemented (with dolomite, +-analcime, and mixed-layer clays) siltstones. Argillites are abundant throughout the Lockatong sequence; they occur mostly in Division

III, above the laminated lake-bottom beds. In thick detrital cycles, massive argillite beds can range up to 5-8 meters thick or more. Fractures are very sparse in these beds, with poor water yields.

Another important lithology in the Lockatong Formation is the lake-bottom mudstone or shale of Division II. The importance of these beds to the hydrology of the Lockatong sequence can not be overstated, as will be discussed in the section on hydrologic properties. These shaly beds function as semi-confined aquifers throughout most of the outcrop and subcrop range of the Lockatong Formation.

Area of occurrence: The Lockatong Formation crops out in three belts. The southern (New Brunswick) belt runs from Wilburtha, north of Trenton, nearly to the New York State line. The central (Hopewell belt) forms part of the Lambertville and Sourland ridges, terminating in Montgomery Township (Somerset County), where it is cut off by the Hopewell Fault. The northern (Hunterdon Plateau belt) stretches in New Jersey from the Delaware River near Byram to near Flemington, where the Flemington Fault cuts off the section. Lockatong-like sequences are also found throughout much of the Brunswick Formation, although they are generally much thinner. Two thicker lake sequences (The Perkasie Member of McLaughlin, 1959) occur in the upper third of

the Brunswick. The Perkasie is nearly indistinquishable from the Lockatong proper in exposure along the Delaware, near the center of the basin. The Perkasie lake beds thin drastically toward the northeast, but are still recognizable as distinct drab lake bed sequences, usually 1-2 meters thick.

Brunswick "Group"

"Passaic Member"

The contact between the Lockatong lithofacies and the overlying Brunswick facies is gradational. There is a much more gradual vertical facies change going from Lockatong to Brunswick than occurs in the Stockton to Lockatong progression. The formation contact is defined as the position at which red beds make up more than 50% of the section. This definition is applicable as a field mapping criterion and can be easily applied across most of the basin in New Jersey.

The dominant facies in the Brunswick is red siltstone, which accounts for at least 60% of the section. The remaninder of the section is mostly mudstone, a non-fissile equivalent of shale. The lithology of the siltstone is as follows:

BRUNSWICK SILTSTONE

Framework:

Grain size-coarse silt to very fine sand

Mineralogy-quartz 90%+

feldspar, up to 10% (mostly microcline)

mica, mostly biotite; up to @5%

Matrix/Cement: illite+hematite/silica+-dolomite or calcite

Accessories: ilmenite/magnetite, often in placer laminae; rare zircon, spinel, hornblende

Color: Reddish-brown (10R4/3), Dusky red (2.5YR3/4), or reddish-grey (10R4/2).

Also grey, green, and purple, in lake beds

The Brunswick sequence generally becomes finer from bottom to top, with more mudstone and less siltstone going upward. The mudstone is mostly a hackly to chippy weathering, indistinctly bedded, brownish red rock. The mudstone lacks the well-developed vertical joints present in the other Newark Series rocks. As a result, groundwater flow characteristics of the mudstone differ from those of the other lithofacies in the Newark Basin. The mudstone is intensely fractured at a very small scale (1-5mm), producing a rock with hydrologic

properties similar to an unconsolidated formation (the Kirkwood Formation, for example).

Hydrologic properties of the Newark rocks:

Lockatong and Brunswick lithofacies:

The hydraulic properties of these two rock type associations form a continuous series between two end member lithologies. The low-yielding end member is represented by massive, hard, red siltstone in the Brunswick (Table 2A). This lithology will be referred to as type 'a' rocks. Ground-water in these rocks is stored in near-vertical and bedding-plane joints, and in the little pore volume present in the rocks (mostly in the range 0.5 to 3.5%). Water is transmitted through the joint systems. As a result, wells drilled in the massive lithology have low yields, low specific capacities (large drawdown for a given yield), and high ground-water flow velocities. The high flow velocities in these rocks are caused by the low bulk porosity (and low specific yield) and high permeability of open fractures. Flow rates on the order of tens of feet per day are possible in the hard, fractured rocks. The direction of ground-water flow in this lithology is strongly influenced by the orientation of the principal joint sets. The main fractures are usually high-angle (normal to bedding plane) joints, typically spaced 10 cm to 1 m apart. The high-angle joints occur in sets with a dominant strike orientation. One or two joint sets are most common; three or more cross-cutting sets may occur along fold axes or near major faults.

The high-yielding end member lithology (type 'b' rock)is represented by a soft, hackly weathering or fissile mudstone to shale (Table 3D). In the Lockatong, this lithology occurs in the lake bottom beds of Division 2 of lake cycles. Mudstone is the second most abundant lithology in the Brunswick; in much of the upper two-thirds of the formation, mudstone and shale can compose the entire section. Where mudstone occurs alone, the hydraulic properties are similar to an unconsolidated formation with a high clay content. Ground-water flow is nearly isotropic, but very slow (on the order of one foot per day or less). Where mudstone or shale occurs interbedded with siltstone, sandstone, or argillite, the mudstone forms the aquifer. Fracture porosity in the mudstone is at least an order of magnitude higher than that of the hard lithologies, producing very high anisotropy in interbedded sections.

The hydraulic properties of the porous and semi-porous media of the Triassic section do not resemble those of the non-lithified Coastal Plain sequence, in several important ways. In the Coastal Plain sediments, the aquifers are sands or very sandy mixtures of sediment. The aquifer sands have high porosity, high permeability, high hydraulic conductivity, and high specific storage. The confining layers in the Coastal Plain are clay or very clayey sediment. The clays have low porosity, low permeability, low hydraulic conductivity, and low specific storage.

In the Triassic rocks, the aquifers can be mudstone or shale, hard sandstone or argillite, or a combination of two or more

lithologies. In the case of high-yielding mudstone aquifer bounded by massive rock, the aquifer has a high fracture porosity, moderate to low permeability, moderate to low hydraulic conductivity, and high specific storage. In the Triassic section the semi-confining boundaries are usually interfaces between different rock types with high permeability contrast. The leaky confining medium of hard sandstone or massive argillite has very low bulk porosity and permeability, but flow in sparse, open fractures can be high-velocity, though not of great volume. Thus, the hydraulic conductivity of the "aquitard" may be relatively high; specific storage is low. The opportunity for leakage through such a medium is great.

Structural control of ground-water flow:

In parts of the basin where hard siltstone, sandstone, or argillite make up a significant part of the section, joint-controlled flow of ground water will be a factor in determining direction and velocity of flow.

Principal joint sets nearly always form an acute angle to the strike of bedding. The principal joint set is nearly always rotated counterclockwise from the strike direction, usually by 15-50 degrees. In one area where good survey coverage has been made (Pennington 7 1/2' quad), the average difference between strike and principal joint direction was about -38 degrees.
In areas where there is little difference in lithology in the stratigraphic section, fracture control of ground water movement is probably dominant.

Surface flow can be considered to be completely controlled by topography. Flow in the unsaturated zone should be controlled by both topography and fracture orientation where rock is relatively uniform, or by topography and dip direction where rock layers have heterogeneous flow characteristics.

Summary of hydrogeology of the Brunswick:

In summary, the most important things to know about a site are:

Lithology- can determine whether ground water flows mainly parallel or perpendicular to bedding; can affect flow rates.

Topography- very important in determining runoff flow, unsaturated zone flow, and ground water movement in upper (unconfined) aquifer.

Fractures - principal fracture direction second in importance to topographic control in shallow flow. Fracture flow may be dominant in deep aquifers, except where there is large lithology contrast.

Dip of bedding- in cases where there is significant hydraulic anisotropy between interbedded units, flow of water in the plane of dip can be significant in both unsaturated zone (flow mostly downdip) and below the water table (nearly parallel to bedding, following hydraulic gradient).

REFERENCE NO. 11

TABLE 3-6.—HYDRAULIC CONDUCTIVITY OF GEOLOGIC MATERIALS

Type of material	Assigned hydraulic conductivity [a] (cm/sec)
clay; low permeability till (compact unfractured till); shale; unfractured metamorphic and igneous rocks	10^{-8}
silt; loesses; silty clays; sediments that are predominantly silts; moderately permeable till (fine-grained, unconsolidated till, or compact till with some fractures); low permeability limestones and dolomites (no karst); low permeability sandstone; low permeability fractured igneous and metamorphic rocks	10^{-6}
sands; sandy silts; sediments that are predominantly sand; highly permeable till (coarse-grained, unconsolidated or compact and highly fractured); peat; moderately permeable limestones and dolomites (no karst); moderately permeable sandstone; moderately permeable fractured igneous and metamorphic rocks	10^{-4}
gravel; clean sand; highly permeable fractured igneous and metamorphic rocks; permeable basalt; karst limestones and dolomites	10^{-2}

[a] Do not round to nearest integer.

TABLE 3-7.—TRAVEL TIME FACTOR VALUES [a]

Hydraulic conductivity (cm/sec)	Thickness of lowest hydraulic conductivity layer(s) [b] (feet)			
	Greater than 3 to 5	Greater than 5 to 100	Greater than 100 to 500	Greater than 500
Greater than or equal to 10^{-3}	35	35	35	25
Less than 10^{-3} to 10^{-5}	35	25	15	15
Less than 10^{-5} to 10^{-7}	15	15	5	5
Less than 10^{-7}	5	5	1	1

[a] If depth to aquifer is 10 feet or less or if, for the interval being evaluated, all layers that underlie a portion of the sources at the site are karst, assign a value of 35.

[b] Consider only layers at least 3 feet thick. Do not consider layers or portions of layers within the first 10 feet of the depth to the aquifer.

Determine travel time only at locations within 2 miles of the sources at the site, except: If observed ground water contamination attributable to sources at the site extends more than 2 miles beyond these sources, use any location within the limits of the observed ground water contamination when evaluating the travel time factor for any aquifer that does not have an observed release. If the necessary subsurface geologic information is available at multiple locations, evaluate the travel time factor at each location. Use the location having the highest travel time factor value to assign the factor value for the aquifer. Enter this value in Table 3-1.

3.1.2.5 *Calculation of potential to release factor value.* Sum the factor values for net precipitation, depth to aquifer, and travel time, and multiply this sum by the factor value for containment. Assign this product as the potential to release factor value for the aquifer. Enter this value in Table 3-1.

3.1.3 *Calculation of likelihood of release factor category value.* If an observed release is established for an aquifer, assign the observed release factor value of 550 as the likelihood of release factor category value for that aquifer. Otherwise, assign the potential to release factor value for that aquifer as the likelihood of release value. Enter the value assigned in Table 3-1.

3.2 *Waste characteristics.* Evaluate the waste characteristics factor category for an aquifer based on two factors: toxicity/mobility and hazardous waste quantity. Evaluate only those hazardous substances available to migrate from the sources at the site to ground water. Such hazardous substances include:

- Hazardous substances that meet the criteria for an observed release to ground water.
- All hazardous substances associated with a source that has a ground water containment factor value greater than 0 (see sections 2.2.2, 2.2.3, and 3.1.2.1).

3.2.1 *Toxicity/mobility.* For each hazardous substance, assign a toxicity factor value, a mobility factor value, and a combined toxicity/mobility factor value as specified in the following sections. Select the toxicity/mobility factor value for the aquifer being evaluated as specified in section 3.2.1.3.

3.2.1.1 *Toxicity.* Assign a toxicity factor value to each hazardous substance as specified in Section 2.4.1.1.

3.2.1.2 *Mobility.* Assign a mobility factor value to each hazardous substance for the aquifer being evaluated as follows:

- For any hazardous substance that meets the criteria for an observed release by chemical analysis to one or more aquifers underlying the sources at the site, regardless of the aquifer being evaluated, assign a mobility factor value of 1.
- For any hazardous substance that does not meet the criteria for an observed release by chemical analysis to at least one of the aquifers, assign that hazardous substance a mobility factor value from Table 3-8 for the aquifer being evaluated, based on its water solubility and distribution coefficient (K_d).
- If the hazardous substance cannot be assigned a mobility factor value because data on its water solubility or distribution coefficient are not available, use other hazardous substances for which information is available in evaluating the pathway.

TABLE 3-8.—GROUND WATER MOBILITY FACTOR VALUES [a]

Water solubility (mg/l)	Distribution coefficient (K_d) (ml/g)			
	Karst [c]	≤10	>10 to 1,000	>1,000
Present as liquid [b]	1	1	0.01	0.0001
Greater than 100	1	1	0.01	0.0001
Greater than 1 to 100	0.2	0.2	0.002	2×10^{-5}
Greater than 0.01 to 1	0.002	0.002	2×10^{-5}	2×10^{-7}
Less than or equal to 0.01	2×10^{-5}	2×10^{-5}	2×10^{-7}	2×10^{-9}

[a] Do not round to nearest integer.

[b] Use if the hazardous substance is present or deposited as a liquid.

[c] Use if the entire interval from the source to the aquifer being evaluated is karst.

REFERENCE NO. 12

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 11:30 [✓] AM [ ] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: MIKE SFERRUZZO (201) 546-2200 Telephone No.

Affiliation: GARFIELD WATER DEPARTMENT

Malcolm Pirnie Staff: FREDERICK V LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO MR SFERRUZZO TO DETERMINE HOW THE GARFIELD WATER DEPARTMENT OBTAINED THEIR WATER

MR SFERRUZZO SAID THAT THE GARFIELD WATER DEPARTMENT DRAWS WATER FROM THE PASSAIC VALLEY WATER COMMISSION & FROM WELL FIELDS LOCATED IN ELMWOOD PARK. THESE WELLS ARE LOCATED IN THE AREA BOARDERED BY RIVER RD & THE RAILROAD TRACKS TO THE WEST & EAST & BY GILBERT & WASHINGTON STREETS IN THE NORTH & SOUTH.

WELLS IN THE WELL FIELD WERE FOUND TO BE CONTAMINATED WITH VOC'S. MALCOLM PIRNIE WAS SUBCONTRACTED BY BOSWELL ENGINEERING, THE TOWN ENGINEERS, TO DESIGN AN AIR STRIPPER FOR THE WELLS. THE WELLS & THE AIR STRIPPER ARE CURRENTLY IN USE/OPERATION.

BOSWELL ENGINEERING (201) 641-0770
TOM SKRABEL
KEVEN BOSWELL

MR SFERUZZO ALSO SAID THAT THE WATER DISTRIBUTION SYSTEM IS A BLENDED ONE & THAT THE POPULATION SERVED BY IT IS APPROXIMATELY 32,000.

FRED LONEKER

f:\rectele.jan(1)

REFERENCE NO. 13

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 2:30 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: TONY BERKHOUT (201) 794-5301 Telephone No.

Affiliation: FAIR LAWN TOWN ENGINEER

Malcolm Pirnie Staff: FRED LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

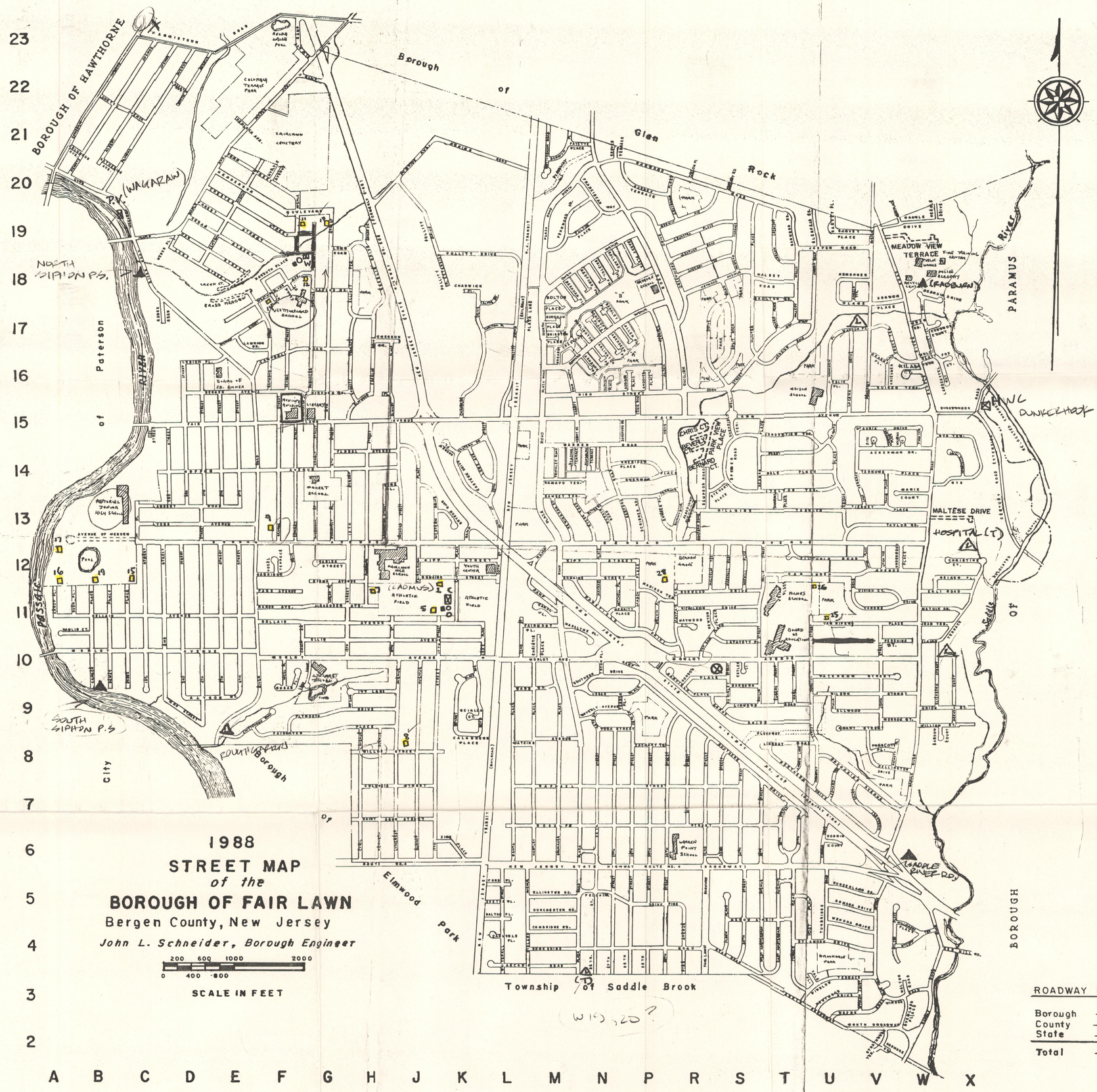
Summary of [✓] Conversation [ ] Agreement:

MR BERKHOUT TOLD ME THAT THE FAIR LAWN WATER DEPARTMENT DRAWS ITS WATER FROM THE PASSAIC VALLEY WATER COMMISSION & FROM MUNICIPAL WELLS IN TOWN. THE SYSTEM IS A BLENDED ONE SERVING A POPULATION ~ 32,000 PEOPLE

HE IS SENDING A COPY OF A MUNICIPAL WELL LOCATION MAP TO IDENTIFY WHERE IN TOWN THESE WELLS ARE SITUATED.

FRED LONEKER

f:\rectele.jan(1)



ABBOTT ROAD	M-15	FAIRCLOUGH PLACE	J-12	McKINLEY STREET	R-9	SADDLE RIVER ROAD	W-2	W-20	
ABBOTT ROAD NORTH	H-16	FAIRHAVEN PLACE	E-8	MADELYNE PLACE	H-10	ST. ANNE STREET		J-6	
ABERDEEN PLACE	H-17	FAIR LAWN AVENUE	E-15	W-15	MADISON TERRACE	P-11	SAMPSON ROAD		R-13
ACKERMAN DRIVE	V-15	FAIR LAWN PARKWAY	R-4	MALCOLM TERRACE	R-12	SANDFORD ROAD	W-13	N-15	
ADDISON PLACE	N-16	FAIRMOUNT PLACE	L-11	MANDON PLACE	T-16	SANDOW COURT		W-8	
ALBERT AVENUE	B-21	FAYETTE PLACE	H-21	MANOR AVENUE	F-11	SCIALLA COURT		K-9	
ALDEN TERRACE	P-17	FERN STREET	F-20	MANSFIELD DRIVE	P-10	SCRIBNER ROAD		H-13	
ALEXANDER AVENUE	E-11	FERNWOOD DRIVE	H-19	MAPLE AVENUE	E-19	G-23	SHEFFIELD TERRACE		S-15
ALLEN PLACE	W-17	FERRY HEIGHTS	T-14	MARGARET COURT	V-6	SHERIDAN PLACE		W-14	
ALLWOOD PLACE	V-9	FINN TERRACE	V-15	MARIE COURT	W-13	SHERMAN PLACE		P-14	
ALYSON STREET	E-9	FLORAL AVENUE	H-14	MARSHALL ROAD	R-12	SIMMONS PLACE		S-13	
ANDOVER PLACE	P-16	FORD PLACE	K-5	MASON PLACE	N-11	SMITH AVENUE		D-22	
ANDREW PLACE	J-14	FOREST STREET	E-19	MATULE DRIVE	W-11	SOUTH BROADWAY		V-2	
ANGELO TERRACE	U-18	FOX COURT	X-16	MAYFAIR TERRACE	P-11	SOUTHERN DRIVE	P-9	S-7	
ARCADIA ROAD	M-3	FRANCISCAN WAY	N-20	MAYNARD PLACE	H-11	SPERBER ROAD		R-14	
ARDMORE COURT	V-2	FULTON PLACE	H-19	MAYWOOD COURT	R-11	SPLIT ROCK ROAD		S-17	
ARLINGTON PLACE	N-17			MAXWELL PLACE	S-12	STELTON TERRACE		T-13	
ARNOLD STREET	G-14	GARDEN VIEW TERRACE	T-15	McBRIDE AVENUE	J-20	STEWART PLACE		R-13	
ARNOT PLACE	A-11	GARDINER ROAD	G-16	MELVIN PLACE	P-11	STRATHMORE TERRACE		V-2	
ASHBURN PLACE	H-16	GARFIELD PLACE	R-9	MENOW STREET	T-4	SUMMIT AVENUE		J-6	
AUDUBON PLACE	N-16	GARRISON TERRACE	R-18	MERRITT PLACE	N-11	SUMNER PLACE		P-13	
AVENUE OF HEROES	B-13	GARVEY PLACE	U-19	MIDLAND AVENUE	L-4	SUNDERLAND DRIVE		U-5	
		GARWOOD ROAD	T-20	MITCHELL PLACE	N-11	SUNNYSIDE DRIVE		P-14	
BACKUS ROAD	G-18	GENTNER ROAD	R-19	MONROE STREET	V-9	SUSAN PLACE		F-9	
BALLARD PLACE	N-18	GEORGE STREET	F-13	F-16	MORLOT AVENUE	A-10	W-10	SYCAMORE DRIVE	U-4
BANCROFT PLACE	N-17	GIBSON PLACE	R-20	MOSS ROAD	W-17				
BANTA PLACE	L-7	GIEGER PLACE	K-12	MYRTLE AVENUE	F-20	TANIS PLACE		W-14	
BARBARA PLACE	S-9	GLENFAIR ROAD	T-19			TAYLOR ROAD		V-13	
BARRY PLACE	N-19	GODWIN AVENUE	P-19	NAUGLE DRIVE	W-19	TERHUNE PLACE		V-14	
BEDFORD PLACE	M-18	GOLDBLATT TERRACE	W-16	N.J.HIGHWAY RT. 4	K-5	U-5	TIERNEY PLACE		V-13
BEEKMAN PLACE	M-18	GORDON PLACE	R-9	N.J.HIGHWAY RT. 208	V-6	E-23	TOWNLEY ROAD		M-14
BELLAIR AVENUE	A-11	K-11	GRANT STREET	V-8	NEVINS ROAD	K-20	TRYON PLACE		N-10
BERDAN AVENUE	A-12	W-12	GREENWOOD DRIVE	P-19	NEWTON PLACE	R-11	TUNBRIDGE ROAD		U-4
BERGEN AVENUE	F-16	GREGORY ROAD	S-20	NICHOLSON DRIVE	S-11				
BERKELEY PLACE	N-17	GREYDANUS PLACE	P-19	NORMA AVENUE	G-12	UNDERWOOD PLACE		V-12	
BERKSHIRE ROAD	N-4	GRUNAUER PLACE	M-7	NORTHERN DRIVE	V-7	UNION STREET		X-9	
BERWYN PLACE	M-21	GRUNSTRA PLACE	R-19			UPTON PLACE		U-12	
BLUE HILL AVENUE	V-4	GURNEY TERRACE	P-20	NORWOOD DRIVE	R-11	URBAN PLACE		N-9	
BOLTON PLACE	M-17	GROVER TERRACE	N-21	NOTTINGHAM ROAD	H-20	UTICA TERRACE		V-12	
BOYD AVENUE	K-9								
BREARLY CRESCENT	H-16	HALE PLACE	T-14	OAK STREET	E-19	E-18	VAN DUREN AVENUE		V-12
BRENNAN COURT	W-9	HALSEY ROAD	S-18	ONTARIO AVENUE	F-19	VANORE DRIVE		V-11	
BRIGHTON PLACE	M-17	HALSTEAD TERRACE	S-18	ORCHARD STREET	H-13	VAN RIPER PLACE		V-11	
BRISTOL PLACE	N-13	HAMILTON ROAD	S-18	OVERLOOK PLACE	V-2	VAN SAUN PLACE		S-10	
BROADWAY	K-5	HAMLIN COURT	A-11	OWEN AVENUE	H-18	VEILE PLACE		T-11	
BROOKSIDE AVENUE	V-7	HARLOW CRESCENT	T-19			VERNON PLACE		N-9	
BRYANT PLACE	K-9	HARRIS PLACE	T-17	PARK AVENUE	F-11	VICTORIA ROAD		U-12	
BRYSON ROAD	J-13	HARRISON DRIVE	F-12	PARMELEE AVENUE	F-16	VIRGINIA DRIVE		U-6	
BURBANK STREET	H-12	H-15	HARRISTOWN ROAD	F-23	PATERSON STREET	V-9	U-9	VIVIAN COURT	V-11
BURKE PLACE	K-10	HARTLEY PLACE	L-6	PELLINGTON DRIVE	V-8	VOGEL TERRACE		F-12	
BURLINGTON PLACE	H-17	HAZEL PLACE	F-10	PELLACK DRIVE	P-4				
BURNHAM PLACE	H-17	HEDMAN PLACE	S-14	PERSHING STREET	V-10	WAGARAW ROAD		L-19	
BUSH PLACE	A-11	HEIGHTS AVENUE	B-22	PHILIP STREET	S-9	S-12	WALSH PLACE		G-11
		HEMLOCK AVENUE	E-21	PICKETT PLACE	V-8	WALTON ROAD		V-3	
CADMUS PLACE	K-11	HENDERSON BOULEVARD	F-20	PINE AVENUE	R-4	WARD STREET		L-9	
CALABRESE PLACE	K-9	HENRIETTA COURT	W-14	PLAZA LANE	L-17	WARREN ROAD		N-14	
CALYNE DRIVE	K-18	HEROLD DRIVE	W-19	PLAZA ROAD	H-6	H-15	WATKINS AVENUE		H-8
CAMBRIDGE ROAD	H-4	HEYWOOD AVENUE	R-18	PLAZA ROAD NORTH	H-16	N-20	WAVERLY AVENUE		N-9
CAMP COURT	F-16	HIGH STREET	N-16	U-17	PLYMOUTH DRIVE	G-9	WAYNE ROAD		U-2
CAMPBELL ROAD	F-17	HILLERY STREET	T-18	POLLITT DRIVE	K-16	WEBER PLACE		D-18	
CANGER PLACE	B-16	HILLSIDE TERRACE	T-13	POMONA AVENUE	C-21	WELL DRIVE		R-16	
CARLISLE PLACE	K-4	HOPPER AVENUE	F-14	PRESCOTT PLACE	W-8	WENONAH DRIVE		U-4	
CARLTON PLACE	K-17	HOWARD AVENUE	N-17	PROSPECT AVENUE	W-16	W. AMSTERDAM AVENUE		S-4	
CAROL PLACE	L-11	HUNTER PLACE	S-17			WESTERN DRIVE		J-13	
CEDAR STREET	E-18	E-19			RADBURN ROAD	N-21	P-16	WESTMORELAND AVENUE	F-18
CENTRAL AVENUE	D-18	IVY LANE	H-9		RAMAPO TERRACE	M-14	WESTWOOD DRIVE		U-3
CENTURY RD. EXT.	X-14				RAMSEY TERRACE	M-13	WHITEHALL STREET		L-4
CHADWICK PLACE	K-18	JASPER ROAD	U-19		RANDOLPH TERRACE	M-14	WILCOX PLACE		V-4
CHANDLER DRIVE	K-16	JEAN TERRACE	W-10		RANGE ROAD	C-17	WILKENS COURT		V-15
CHARLES STREET	G-12	JEROME PLACE	U-14		RAPHAEL STREET	L-7	S-7	WILLIAMS STREET	X-8
CHESTER STREET	F-19	JOHN STREET	V-9		RAYMOND STREET	E-16	WILLIAMSON PLACE		V-4
CHITTENDEN ROAD	E-8	JORDAN ROAD	T-17		READING TERRACE	M-14	WILLOW STREET		J-8
CHRISTIE PLACE	L-10				RED MILL ROAD	W-4	WILSON STREET		V-9
CHRISTINE COURT	X-12	KARL STREET	T-9		REMINGTON ROAD	M-13	WINDSOR ROAD		V-3
COLUMBIA STREET	J-7	KATHERINE AVENUE	B-19		RICHARD STREET	F-17	WINSLOW TERRACE		U-3
COLUMBUS AVENUE	A-21	KEARNS PLACE	V-16		RIVER ROAD	E-10	WYCKOFF TERRACE		W-4
COMERFORD PLACE	V-15	KEITH PLACE	W-19		ROMAINE STREET	K-12	P-12	WYMAN COURT	U-3
COSGROVE COURT	W-17	KENNETH AVENUE	H-6		ROMANA DRIVE	U-4			
CRAIG ROAD	N-15	KERSHNER PLACE	U-18		ROOSEVELT PLACE	G-13	YALE PLACE		T-3
CYRIL AVENUE	G-6	KIPP STREET	K-12	M-12	ROSALIE STREET	P-6	YERGER ROAD		T-4
		KNOTT TERRACE	V-16		ROSE PLACE	H-13	YORK STREET		N-8
DALTON PLACE	K-5	KOSSUTH PLACE	F-18		ROSEWOOD STREET	F-13	YOST PLACE		T-4
D'AURIA DRIVE	V-15	KRAMER PLACE	V-17		RUSKIN ROAD	N-13			
DE BRUIN DRIVE	W-18	KRIESMER PLACE	V-16		RUTGERS TERRACE	N-13	ZACHARY TERRACE		P-8
DEWEY PLACE	B-10	KUIKEN TERRACE	V-16		RYAN ROAD	S-3	ZINK PLACE		K-6
DOBRIN COURT	U-6	KILADA COURT	V-16		RYDER ROAD	H-13	ZITO COURT		V-15
DORCHESTER ROAD	M-4	LAFAYETTE PLACE	S-10		RYS TERRACE	W-14			
DOROTHY STREET	T-8	LAKE STREET	E-18	E-19			1st STREET	C-10	C-15
DUNKERHOOK ROAD	X-15	LAKESIDE AVENUE	D-22				2nd STREET	C-9	C-14
		LAMBERT ROAD	D-13				3rd STREET	D-9	D-14
E. AMSTERDAM AVENUE	T-4	LAMRING DRIVE	F-17				4th STREET	D-9	D-14
EASTERN DRIVE	K-13	LANDZETTEL WAY	W-17				5th STREET	E-9	E-14
EBERLIN DRIVE	H-17	LEGION PLACE	D-16				6th STREET	E-9	E-14
EDISON COURT	H-19	LENOX DRIVE	T-8				11th STREET		G-15
EDWARD STREET	F-13	LEONARD TERRACE	U-7				12th STREET		G-10
ELDEN PLACE	R-4	LESLIE PLACE	U-16				15th STREET		H-10
ELAINE TERRACE	W-10	LEXINGTON STREET	H-13				17th STREET		J-6
ELIZABETH STREET	W-9	LINCOLN AVENUE	A-21				20th STREET	K-11	K-13
ELLINGTON ROAD	M-5	LINDEN LANE	T-7				22nd STREET		L-10
ELLIOTT TERRACE	G-18	LINDSAY ROAD	T-8				26th STREET	N-4	N-6
ELLIS AVENUE	J-10	LINWOOD ROAD	S-9				27th STREET	N-4	N-6
ELM AVENUE	F-23	LONG ROAD	G-19				28th STREET	N-4	N-6
ELMARY PLACE	H-16	LORETTO AVENUE	B-22				29th STREET	P-4	P-6
ELMWOOD PLACE	H-16	LORI LANE	F-9				30th STREET	P-4	P-6
EMERSON DRIVE	H-17	LOWE AVENUE	K-14				31st STREET		R-7
ERLI ROAD	W-11	LUCENA DRIVE	U-16				32nd STREET		R-6
ESSEX PLACE	B-10	LYLE TERRACE	V-13				33rd STREET		R-6
ESTLER COURT	S-10	LYNCREST AVENUE	H-6				34th STREET	S-4	S-6
EUGENE STREET	T-9	LYONS AVENUE	D-13				35th STREET		S-6
EVERETT TERRACE	G-16						36th STREET		T-6
EXETER PLACE	K-5						37th STREET		T-6

ROADWAY MILEAGE	
Borough	81.46
County	11.41
State	6.11
Total	98.98

⊠ - Pump Station
- Well House
O - Ground Tanks
⊗ - Elevated Tank
■ - Air Stripper
▲ - CONSOLIDATED △ - LEASE LINES

25,26,28 NOT TIED INTO STRIPPER - DIRECT CONNECT
-26 SHUT DOWN DUE TO F-6 CONTA

Private:

BERNARD COURT	R-15
BEVERLY COURT	R-15
CHRIS COURT	R-15
CREEK COURT	D-18
CROSS MEADOW	E-17
MALTESE DRIVE	X-13
MEADOWVIEW TERRACE	W-19
PARK VIEW PLACE	R-15

REFERENCE NO. 14

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/27/92 Time: 3:00 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: JIM SCHAEFER Telephone No.

Affiliation: MALCOLM PIRNIE, INC. (WATER CONSULTANT - GARFIELD/FAIR LAWN)

Malcolm Pirnie Staff: FREDERICK V LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO JIM SCHAEFER REGARDING THE WELLS LOCATED IN FAIRLAWN & GARFIELD'S WELLS LOCATED IN ELMWOOD PARK TO DETERMINE THE DEPTHS OF THESE MUNICIPAL SUPPLY WELLS & THE AQUIFER OF CONCERN. THE FOLLOWING IS A SUMMARY OF THE INFORMATION OBTAINED:

- THE WELLS IN FAIRLAWN & ELMWOOD PARK ARE DRILLED TO A DEPTH OF 350-400 FEET INTO THE BRUNSWICK SHALE AQUIFER.
- JIM WILL FAX A WELL LOCATION MAP FOR THE WELLS IN ELMWOOD PARK OWNED BY THE BOROUGH OF FAIRLAWN

FRED LONEKER

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MALCOLM PIRNIE

FACSIMILE TRANSMITTAL

MALCOLM PIRNIE, INC.
ONE INTERNATIONAL BOULEVARD
MAHWAH, NJ 07495-0018
TEL: (201) 529-4700
FAX: (201) 529-1415

TO: Fred Lonekar

OF: CNJ

FAX NO.:

RE: Elmwood Park Wells

FROM: Jim Schaefer

DATE: 2/27/92

TIME: 3:30 PM

JOB NUMBER: 8002-451-701

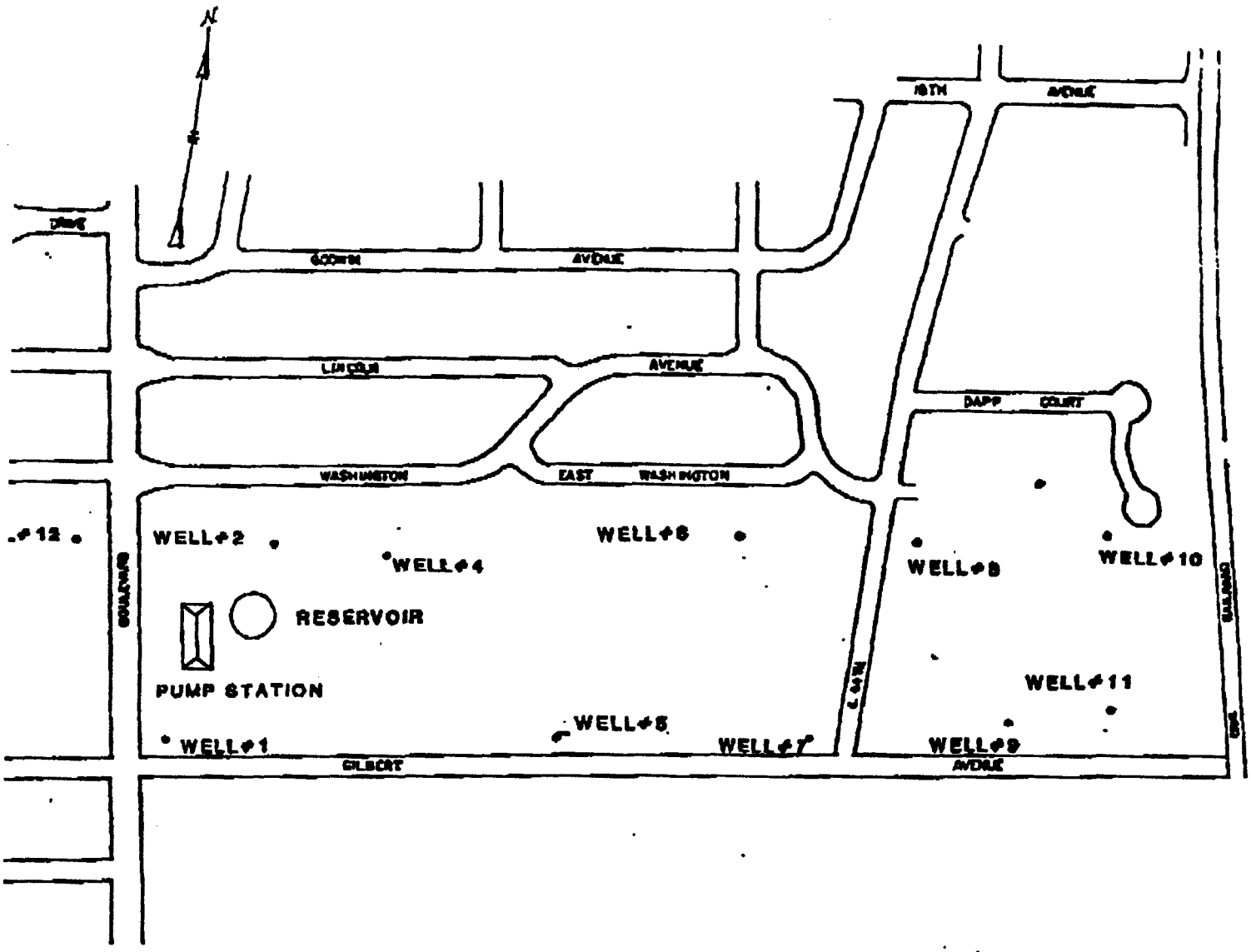
NUMBER OF PAGES: *(including this sheet)* 3

RETURN ORIGINALS TO SENDER: *(circle one)* Yes No

MESSAGE:

If you do not receive all pages or if portions are illegible please call (201) 529-4700 for retransmission

Figure 1-1



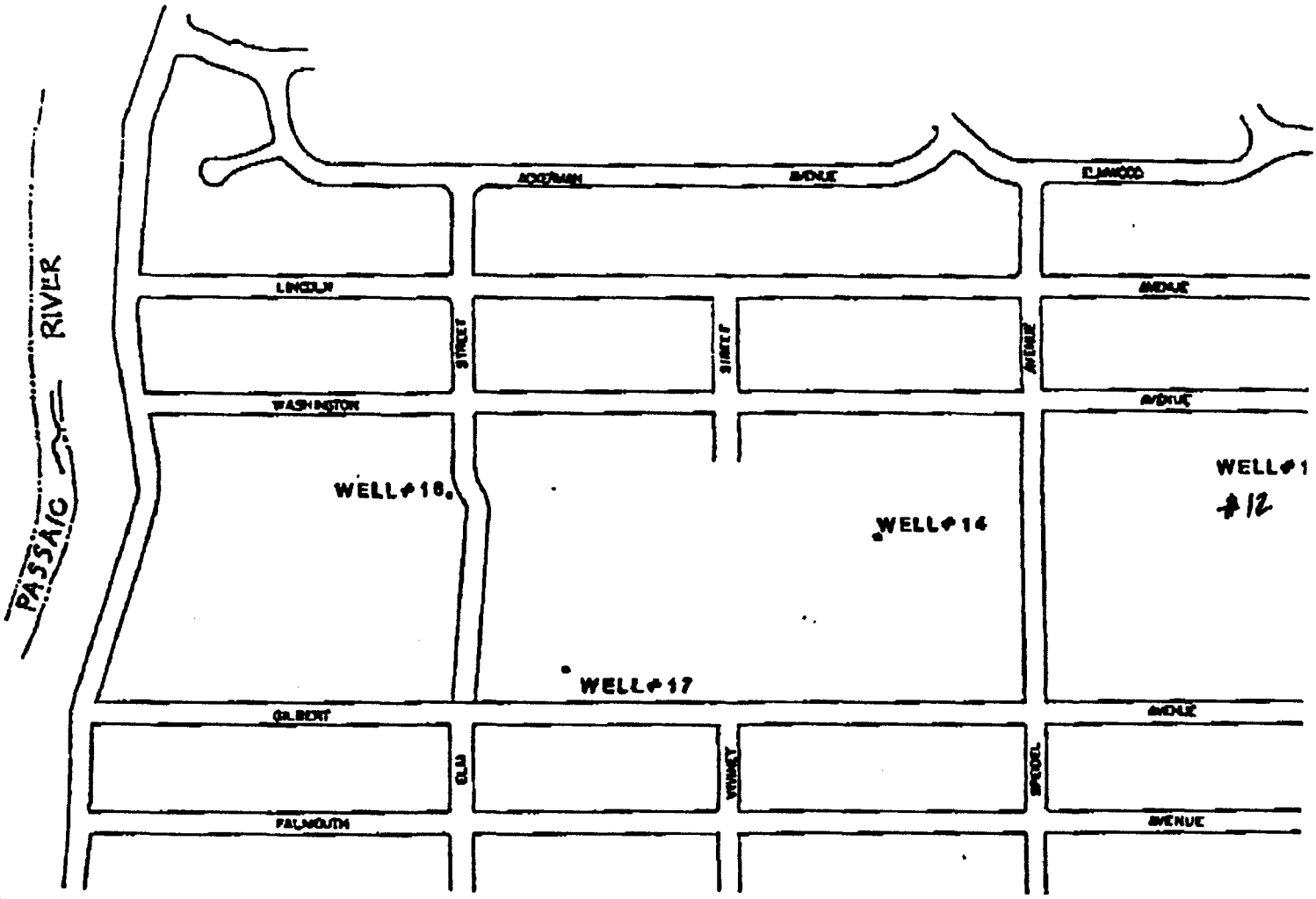
GARFIELD, NEW JERSEY

ELMWOOD PARK WELLFIELD

ALL LOCATIONS ARE APPROXIMATE

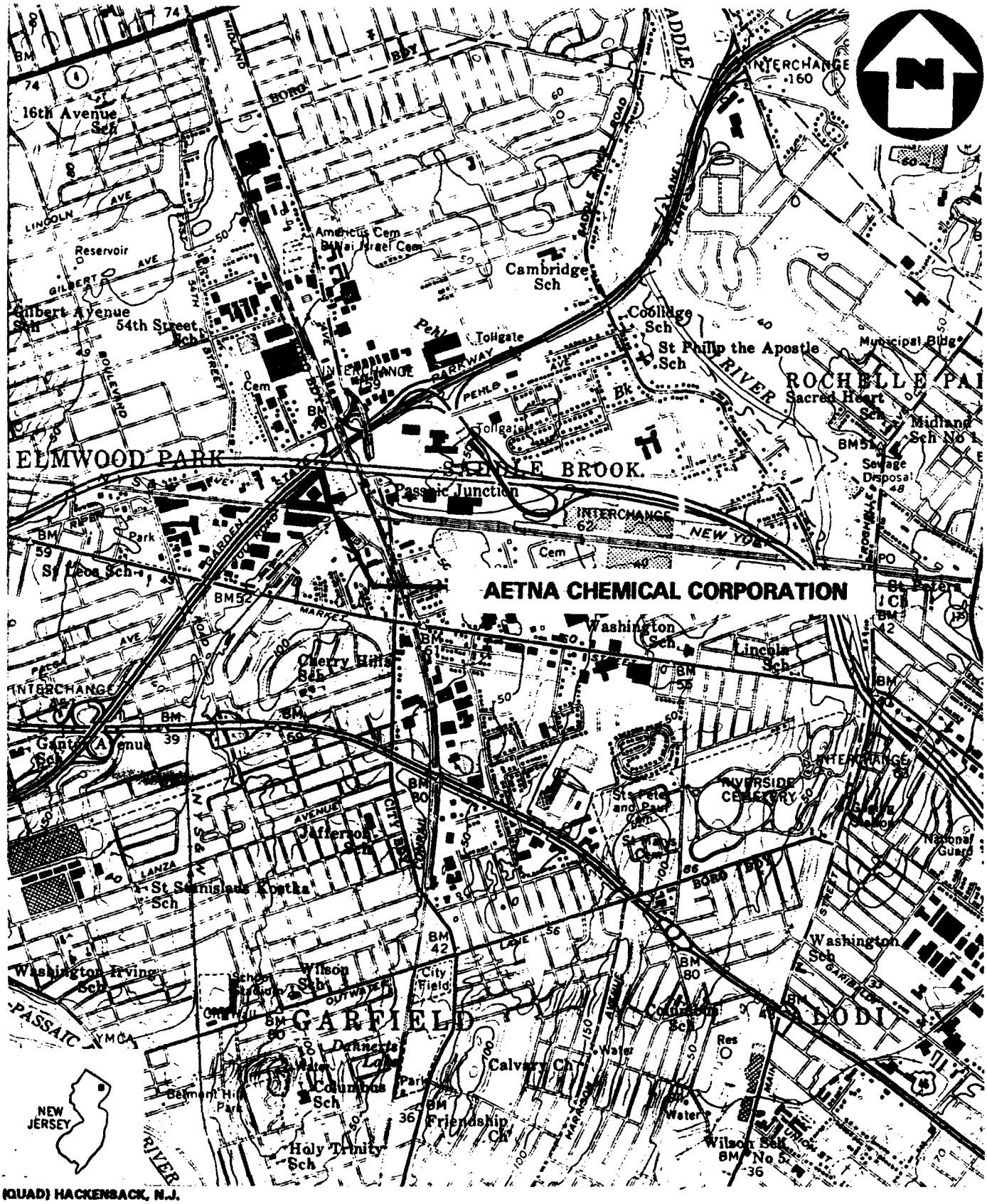
NOT TO SCALE

FROM MALCOLM PIRNIE NNJ (THU)02.27'92 15:59 /ST.15:50/ NO.3300000-441 P. 3/3



MALCOLM PIRNIE

FROM MALCOLM PIRNIE NNJ (THU)02.27'92 15:58 /ST. 15:50/ NO. 3360300-441 P. 2/3



(QUAD) HACKENSACK, N.J.

SITE LOCATION MAP

AETNA CHEMICAL CORPORATION

ELMWOODPARK, N.J.

FIGURE 1

SCALE: 1" = 2000'

REFERENCE NO. 15

MALCOLM PIRNIE, INC. PROJECT NOTE

To: AETNA CHEMICAL CORP FILE Date: 3/13/92

From: FREDERICK V LONEIGER Project Number: 8002-45-1

Subject: DRINKING WATER SUPPLY - 4 MILE RADIUS Site Name: AETNA CHEMICAL CORP.

THE FOLLOWING WATER COMPANIES SERVING RESIDENTS WITHIN A 4-MILE RADIUS OF THE AETNA CHEMICAL CORPORATION DERIVE THEIR WATER FROM SURFACE WATER INTAKES OUTSIDE THE 4-MILE LIMIT OR BUY THEIR WATER FROM WATER COMPANIES THAT DO:

COMPANY	WATER SOURCE
HACKENSACK WATER CO.	ORADELL RESEVOIR
	WOODCLIFF LAKE
	DE FOREST RESEVOIR
	LAKE TAPPAN
~~EUM~~ PASSAIC VALLEY WATER COMMISSION	PASSAIC RIVER @ LITTLE FALLS
ELMWOOD PARK WATER DEPT.	PASSAIC VALLEY WATER COMISSION
LODI DEPT OF PUBLIC WORKS	PASSAIC VALLEY WATER COMMISSION
WALLINGTON DEPT OF PUBLIC WORKS	PASSAIC VALLEY WATER COMMISSION

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 1:30 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: CINDY MUNLEY (201) 767-9300 Telephone No.

Affiliation: HACKENSACK WATER CO.

Malcolm Pirnie Staff: FRED LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO MS. MUNLEY TO DETERMINE WHERE THE HACKENSACK WATER COMPANY DRAWS ITS WATER FROM. SHE SAID THAT THERE ARE FOUR SOURCES / RESEVOIRS & ARE LISTED AS FOLLOWS:

ORADELL RESEVOIR
WOODCLIFFE LAKE
DEFOREST RESEVOIR (NY STATE)
LAKE TAPPAN (N.J/NY)

SHE WAS ALSO ABLE TO VERIFY INFORMATION FROM AN UNNAMED PERSON @ THE SADDLE BROOK WATER DEPARTMENT WHO SAID THAT ALL SADDLE RIVER WATER IS SUPPLIED BY THE HACKENSACK WATER COMPANY.

FRED LONEKER

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ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 11:00 [✓] AM [ ] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: SYLVIA COVELLO (201) 796-1072 Telephone No.

Affiliation: ELMWOOD PARK WATER DEPT.

Malcolm Pirnie Staff: FREDERICK V LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO MS COVELLO TO FIND OUT HOW DRINKING WATER IS SUPPLIED TO ELMWOOD PARK.

MS. COVELLO SAID THAT DRINKING WATER IS OBTAINED FROM THE PASSAIC VALLEY WATER COMMISSION. SHE ALSO SAID THAT SOME RESIDENTS HAVE PRIVATE WELLS OR A COMBINATION OF BOTH WELLS & PUBLIC WATER SUPPLIES.

FRED LONEKER

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ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 1115 [✓] AM [ ] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: PHIL ROOSA (201) 890-2485 Telephone No.

Affiliation: PASSAIC VALLEY WATER COMMISSION

Malcolm Pirnie Staff: FREDERICK V. LOVEKER
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO MR ROOSA TO FIND OUT WHERE THE PASSAIC VALLEY WATER COMMISSION OBTAINS ITS WATER.

MR ROOSA SAID THAT PASSAIC VALLEY DRAWS ALL OF ITS WATER FROM A SURFACE WATER INTAKE LOCATED AT BATTIE'S DAM (SP?) ON THE PASSAIC RIVER. THE DAM IS LOCATED IN THE TOTAWA/ LITTLE FALLS AREA.

FRED LOVEKER

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ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 3:00 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: JIM GASALBERTI (201)365-4068 Telephone No.

Affiliation: LODI DEPARTMENT OF PUBLIC WORKS

Malcolm Pirnie Staff: FRED LONEKER (609)860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

MR. GASALBERTI WAS ABLE TO TELL ME THAT THE LODI WATER DEPARTMENT RECEIVES ALL OF ITS WATER FROM THE PASSAIC VALLEY WATER COMMISSION

FRED LONEKER

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ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 3:30 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: BILL MASAVERTI (201) 777-1726 Telephone No.

Affiliation: WALLINGTON DEPT. OF PUBLIC WORKS

Malcolm Pirnie Staff: FRED LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

MR MASAVERTI TOLD ME THAT WALLINTON TOWNSHIP OBTAINS ALL OF ITS WATER FROM THE PASSAIC VALLEY WATER COMMISSION. THERE ARE NO DRINKING WATER WELLS IN USE IN THE TOWNSHIP

FRED LONEKER

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REFERENCE NO. 16

MALCOLM PIRNIE, INC. PROJECT NOTE

To: AETNA CHEMICAL CORP. FILE
Date: 2/27/92
From: FRED LONEKER
Project Number: 8002-45-1
Subject: GROUNDWATER APPORTIONMENTS
Site Name: AETNA CHEMICAL CORP

THE FOLLOWING ARE CALCULATIONS USED TO DETERMINE THE POPULATION SERVED BY MUNICIPAL DRINKING WATER WELLS FOR EACH RING OF THE 4-MILE RADIUS

2 MUNICIPAL SUPPLIES: GARFIELD & FAIR LAWN

GARFIELD WELLS IN ELMWOOD PARK:

- BLENDED SYSTEM
- 32,000 PEOPLE SERVED
- 13 WELLS
- 32,000 ÷ 13 = 2,462 PEOPLE SERVED/WELL

FAIR LAWN WELLS

- BLENDED SYSTEM
- 32,000 PEOPLE SERVED
- 16 WELLS
- 32,000 ÷ 16 = 2,000 PEOPLE SERVED/WELL

RING	GARFIELD		FAIR LAWN		RING TOTAL
	# WELLS	POPULATION SERVED	# WELLS	POPULATION SERVED	
0-0.25	-	-	-	-	0
0.25-0.5	-	-	-	-	0
0.5-1.0	10	24,620	-	-	24,620
1.0-2.0	3	7,386	1	2,000	9,386
2.0-3.0	-	-	13	26,000	26,000
3.0-4.0	-	-	2	4,000	4,000

REFERENCE NO. 17

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
8061	02/14/92	11:30

DISTRIBUTION:
- Tookey's Garage
- Staff

BETWEEN:	OF:	PHONE:
Dan Van Abs	NJDEPE, Bureau of Water Supply Planning	(609) 633-1179

AND: K. Campbell (NUS)

DISCUSSION:

Mr. Van Abs returned my call of 02/13/92, and provided the following information on Wellhead Protection Area (WHPA) delineation for the State of New Jersey:

- WHPAs are not yet delineated for the state. The Bureau of Water Supply Planning is working on a draft delineation (a multi-year process).

Mr. Van Abs will put HNEC on their mailing list to receive updates on WHPA regulations.

ACTION ITEMS:

K. Campbell 02/14/92

REFERENCE NO. 18

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002451

Date: 2/3/92 Time: 3:00 [ ] AM [✓] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: BOB BRIGHTLY BOSWELL + McCLALE ENGINEERS Telephone No.

Affiliation: TOWN ENGINEER, ELMWOOD PARK

Malcolm Pirnie Staff: FREDERICK V LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO MR BRIGHTLY REGARDING STORMWATER/SURFACE RUNOFF FROM THE AETNA CHEMICAL CORPORATION SITE. I NEEDED TO FIND OUT WHERE RUNOFF ~~WAS~~ IS ULTIMATELY DISCHARGED.

MR BRIGHTLY WAS ABLE TO TELL ME THAT RUNOFF FROM THE SITE IS COLLECTED IN A DRAINAGE DITCH ON-SITE NEAR THE SOUTH SIDE OF THE GARDEN STATE PARKWAY. THIS DITCH CROSSES UNDER THE PARKWAY WHERE IT MEETS A SECOND STORMWATER COLLECTION SYSTEM WHICH EVENTUALLY DISCHARGES TO FLEISHER'S BROOK.

FRED LONEKER

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REFERENCE NO. 19

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-45-1

Date: 2/6/92 Time: 11:45 [✓] AM [ ] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[✓] Outgoing Call To: TOM SKRABEL (201) 641-0770 Telephone No.

Affiliation: BOSWELL ENGINEERING (GARFIELD TOWN ENGINEER)

Malcolm Pirnie Staff: FREDERICK V LONEKER (609) 860-0100
(Receiving or Calling) Name Telephone No.

Summary of [✓] Conversation [ ] Agreement:

SPOKE TO TOM SCRABEL TO ADDRESS TWO QUESTIONS:

1. MONITORING &/OR DESIGN DATA FOR THE CONTAMINATED WELLS / AIR STRIPPER IN ELMWOOD PARK
2. VERIFY THE LOCATION & POINT OF DISCHARGE OF FLEISHER'S BROOK IN GARFIELD.

MR SCRABEL SAID THAT MALCOLM PIRNIE SHOULD HAVE DESIGN &/OR MONITORING DATA. HE TOLD ME THAT SHAUN MINNIHAN WAS HIS CONTACT @ MALCOLM PIRNIE.

MR SCRABEL ALSO SAID THAT FLEISHER'S BROOK TERMINATES IN A POND CALLED DAHNERT'S LAKE IN A MUNICIPAL PARK NEAR THE YMCA ON OUTWATER ROAD. HE SAID THAT THE POND DRAINS TO THE PASSAIC RIVER, ALTHOUGH HE COULD NOT SAY WHERE ON THE RIVER THE OUTFALL WAS LOCATED. A FIELD INVESTIGATION WOULD BE REQUIRED TO DETERMINE THIS.

FRED LONEKER

NOTE: AFTER CONSULTING USGS TOPOGRAPHIC MAPS (HACKENSACK QUAD) IT SEEMS UNLIKELY THAT FLEISHER'S BROOK EMPTIES INTO DAHNERT'S LAKE AS THIS POND IS ~4000 Ft ~~AW~~ EAST OF THE TERMINATING POINT OF THE BROOK AS REPRESENTED ON THE MAP. ~~AN~~ THE POSSIBILITY OF ANOTHER ~~OTHER AREA~~ RUNOFF PATHWAY TO THE PASSAIC RIVER WILL THEREFORE BE EXPLORED.

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REFERENCE NO. 20

MALCOLM PIRNIE, INC. PROJECT NOTE

To: AETNA CHEMICAL CORPORATION FILE Date: 2/7/92
From: FRED LONEKER Project Number: 8002-45-1
Subject: SURFACE WATER PATHWAY Site Name: AETNA CHEMICAL CORP.

AS DOCUMENTED IN THE TELECON DATED 2/6/92, CONVERSATIONS WITH TOM SCRABEL, TOWN ENGINEER FOR THE CITY OF GARFIELD, THE PROBABLE POINT OF ENTRY OF THE FLEISHER'S BROOK/DAHNERT'S LAKE DISCHARGE INTO THE PASSAIC RIVER, IS UNKNOWN. EXAMINING USGS TOPOGRAPHIC MAPS FOR THE IMMEDIATE AREA OF THE BROOK'S TERMINATION POINT, IT CAN BE CONCLUDED THAT THIS POINT LIES @ AN ELEVATION OF ~25ft. THE SHORTEST PATH FROM THE BROOK'S END TO THE PASSAIC RIVER IS ~ 1000 ft FOLLOWING LAND CONTOURS. THIS YIELDS A GROUND SLOPE OF 2.5% TOWARDS THE RIVER. THE PROBABLE POINT OF ENTRY INTO THE PASSAIC RIVER LIES ~300ft UPSTREAM OF THE OUTWATER LANE BRIDGE, AS A RESULT.

REFERENCE NO. 21

GSC-TR-32-90-008

DRAFT

PCGEMS
USER'S GUIDE
RELEASE 1.0

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
EXPOSURE EVALUATION DIVISION

Under
Contract No. 68024281
Task No. 2-28
Project Officer: Lynn Delpire
Task Manager: Patricia Harrigan

Prepared by

GENERAL SCIENCES CORPORATION
6100 Chevy Chase Drive
Laurel, Maryland 20707

April 1990

AETNA CHEMICAL CORP.

LATITUDE 40:54:50 LONGITUDE 74:06:26 1980 POPULATION

KM	0.00- 0.4	0.4- 0.8	0.8- 1.6	1.6- 3.2	3.2- 4.8	4.8- 6.4	SECTOR TOTALS
S 1	2153	4964	13655	58057	137953	202800	419582
RING TOTALS	2153	4964	13655	58057	137953	202800	419582

REFERENCE NO. 22

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-084

Date: 3/4/92 Time: 1:47 [ ] AM [X] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[X] Outgoing Call To: Bob Papson (609)-292-8642 Telephone No.

Affiliation: DEP fisheries bureau

Malcolm Pirnie Staff: Lisa Szegedi (609)-860-0100
(Receiving or Calling) Name Telephone No.

Summary of [X] Conversation [ ] Agreement:

The following fish have been found in the Passaic River - alewife herring, white perch, blue back herring, carp and white sucker

The following fish have been found in the Second River - American eel, carp, banded killyfish, golden shiner, white sucker, brown bullhead, blacknose dace and goldfish

The following fish have been found in the Third River - American eel, pumpkin seed sunfish, banded killyfish, golden shiner, bluegill, black crappie, blueback herring, goldfish, and alewife herring

There is an advisory prohibiting the sale or consumption of all fish along the entire length of the tidally influenced Passaic River from the mouth to Dundee Dam
This advisory includes the Passaic River, Hackensack River and Newark Bay

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REFERENCE NO. 23

Water Resources Data
New Jersey
Water Year 1990

Volume 1. Surface-Water Data

WATER RESOURCES DATA
BOOK 1 1990

MANUAL 4

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NJ-90-1
Prepared in cooperation with the New Jersey Department of Environmental Protection and with other agencies

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ
(National stream quality accounting network station)

LOCATION.--Lat 40°53'05", long 74°13'35", Passaic County, Hydrologic Unit 02030103, on left bank 0.6 mi downstream from Beattie's Dam in Little Falls, and 1.0 mi upstream from Peckman River.

DRAINAGE AREA.--762 mi^2. Area at site used prior to Oct. 1, 1955, 799 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1897 to current year. Monthly discharge only for September 1897, published in WSP 1302. Published as "at Paterson", September 1897 to September 1955.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 120.00 ft above National Geodetic Vertical Datum of 1929 (levels by Passaic Valley Water Commission). Prior to Jan. 8, 1933, nonrecording gage and Jan. 8, 1933, to Sept. 30, 1955, water-stage recorder, at site 3.7 mi downstream at National Geodetic Vertical Datum of 1929 (levels from New Jersey Geological Survey bench mark).

REMARKS.--No estimated daily discharges. Records fair. Diurnal fluctuation at medium and low flow caused by hydroelectric plant at Beattie's Dam. Flow regulated by reservoirs in Rockaway, Pequannock, Wanaque, and Ramapo River subbasins (see Passaic River basin, reservoirs in). Large diversions for municipal supply from Passaic River above Beattie's Dam, and from Rockaway, Pequannock, Ramapo, and Wanaque Rivers (see Passaic River basin, diversions and Hackensack River basin, diversions). In addition, the New Jersey American Water Company (formerly Commonwealth Water Co.) diverts from Canoe Brook near Summit and from Passaic River (see Passaic River basin, diversions); that company and the city of East Orange also divert water for municipal supply by pumping wells. Several measurements of water temperature, other than those published, were made during the year. National Weather Service rain-gage and gage-height and USGS satellite telemeters at station.

COOPERATION.--Gage-height record collected in cooperation with the Passaic Valley Water Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990, DAILY-MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1360	1940	879	488	3720	931	1210	851	2950	770	324	731
2	1360	1990	782	577	3440	862	1150	800	2720	714	358	611
3	1550	1850	732	504	3170	830	1560	685	2400	646	266	510
4	1420	1690	647	445	3000	807	2170	604	2080	500	213	435
5	1230	1520	580	433	2840	740	2290	1140	1740	396	191	373
6	988	1350	560	433	2540	695	2110	1500	1430	310	913	330
7	772	1200	550	424	2240	666	1880	1450	1330	271	2550	309
8	652	1120	519	416	1960	655	1700	1180	1110	244	2930	286
9	571	1470	475	481	1720	630	1520	963	963	260	2500	262
10	511	1870	439	578	1630	628	1360	1120	949	332	2340	254
11	547	1840	417	718	1760	667	1370	2720	905	284	2810	248
12	496	1750	404	774	1730	694	1340	2920	802	328	2850	232
13	365	1620	409	711	1560	680	1170	2790	656	977	2880	226
14	365	1510	378	595	1410	648	1010	3080	581	1140	2900	232
15	329	1530	353	533	1290	621	1280	3070	774	1080	2660	510
16	288	1560	368	507	1270	594	1490	3270	882	1190	2330	554
17	480	1570	335	494	1280	601	1490	5560	840	968	2010	500
18	1070	1450	339	540	1160	889	1430	5980	711	714	1670	467
19	1560	1280	302	654	1030	1040	1270	5770	851	540	1360	410
20	3190	1130	304	690	915	1550	1100	5130	996	413	1020	422
21	4770	1070	289	931	828	2300	1010	4400	1010	356	733	380
22	5410	975	269	1240	778	2420	1040	3810	940	378	582	420
23	4900	884	258	1260	916	2190	1020	3260	884	473	522	592
24	4300	835	257	1180	1330	1900	899	2780	751	986	744	552
25	3710	798	248	1260	1540	1630	817	2290	585	841	1000	440
26	3240	798	250	1980	1450	1380	768	1840	543	624	1200	366
27	2890	834	235	2240	1220	1180	736	1540	492	485	1210	308
28	2500	1010	246	2170	1050	1010	678	1290	360	386	1040	274
29	2110	1100	247	2150	---	890	635	1360	347	306	1040	247
30	1770	988	252	3320	---	946	764	2960	490	260	920	239
31	1650	---	285	3740	---	1140	---	3120	---	241	830	---
MEAN	1818	1351	407	1047	1742	1046	1276	2556	1069	562	1448	391
MAX	5410	1990	879	3740	3720	2420	2290	5980	2950	1190	2930	731
MIN	288	798	235	416	778	594	635	604	347	241	191	226

STATISTICS OF MONTHLY FLOW DATA FOR PERIOD OF RECORD, BY WATER YEAR (WY)

MEAN	628	953	1254	1339	1430	2396	2096	1342	780	540	559	541
MAX	5613	4757	4497	4039	3787	6755	5760	4554	4290	3124	2859	3561
(WY)	1904	1908	1903	1979	1973	1936	1983	1989	1972	1945	1942	1971
MIN	44.5	79.2	111	104	178	423	228	227	84.6	60.3	30.4	28.9
(WY)	1931	1932	1981	1981	1901	1981	1985	1965	1965	1954	1923	1964

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ--Continued

WATER-DISCHARGE RECORDS--Continued

SUMMARY STATISTICS	FOR 1990 WATER YEAR		FOR PERIOD OF RECORD	
AVERAGE FLOW	1224		1156	
HIGHEST ANNUAL MEAN			2394	1903
LOWEST ANNUAL MEAN			269	1965
HIGHEST DAILY MEAN	5980	May 18	28000	Oct 10 1903
LOWEST DAILY MEAN	191	Aug 5	.00	Jul 3 1904
INSTANTANEOUS PEAK FLOW	6020	May 18	31700a	Oct 10 1903
INSTANTANEOUS PEAK STAGE	6.97	May 18	---	
INSTANTANEOUS LOW FLOW	182	Aug 5	.00	Jul 3 1904
10 PERCENTILE	2700		2860	
50 PERCENTILE	921		642	
95 PERCENTILE	259		83	

a Present site.

REFERENCE NO. 24

SUPERFUND CHEMICAL DATA MATRIX

1 November 1991

Appendix A

Chemical Data, Factor Values, and Benchmarks for Chemical Substances

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(305 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Ecotoxicity: Fresh	Ecotoxicity: Salt	Air Gas Migration	Air Gas Mobility Gas	Part
Ammonium sulfamate	007773-06-0	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1	1	NA	NA	No	Yes
Aniline	000062-53-3	10000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	5.0	5.0	5.0	5.0	1000	10	NA	NA	No	Yes
Anthracene	000120-12-7	10	1.0E+00	1.0E-04	2.0E-03	2.0E-07	0.4000	0.4000	5000.0	5000.0	5000.0	5000.0	10000	10000	6	0.0020	Yes	Yes
Antimony	007440-36-0	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	500.0	0.5	500.0	...	...	NA*	NA *	No	Yes
Arsenic	007440-38-2	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5.0	500.0	50.0	500.0	10	100	NA	NA	No	Yes
Asbestos	001332-21-4	10000	1.0E+00	1.0E-04	2.0E-05	2.0E-09	1.0000	1.0000	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Atrazine	001912-24-9	100	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	0.0700	50.0	50.0	50.0	50.0	...	...	6	0.0020	Yes	Yes
Azinphos- ethyl	002642-71-9	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.0700	500.0	500.0	500.0	500.0	...	...	NA	NA	No	Yes
Azinphos- methyl	000086-50-0	100	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	10000	10000	NA	NA	No	Yes
Aziridine	000151-56-4	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	0.5	0.5	0.5	0.5	...	...	11	1.0000	Yes	No
Barium	007440-39-3	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	0.5	0.5	0.5*	1	1	NA	NA	No	Yes
Barium cyanide	000542-62-1	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	0.5	0.5	0.5*	...	...	NA	NA	No	Yes
Benz(a)anthracene	000056-55-3	1000	1.0E+00	1.0E-04	2.0E-05	2.0E-09	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	10000	10000	6	0.0002	Yes	Yes
Benzene	000071-43-2	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.4000	5000.0	5000.0	500.0	50000.0	10000	10000	17	1.0000	Yes	No
Benzene carbonyl chloride	000098-07-4	...	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	1.0000	0.5	0.5	0.5	0.5	10	1	11	1.0000	Yes	No
Benzidine	000092-87-5	10000	1.0E+00	1.0E-04	1.0E+00	1.0E-04	0.4000	0.0700	50.0	50.0	50.0	50.0	...	...	0	0.0002	Yes	Yes
Benzo(a)pyrene	000050-32-8	10000	1.0E+00	1.0E-04	2.0E-05	2.0E-09	1.0000	1.0000	50000.0	500.0	50000.0	500.0	10000	1000	6	0.0002	Yes	Yes
Benzo(j,k)fluorene	000206-44-0	100	1.0E+00	1.0E+00	2.0E-05	2.0E-05	7.0000	0.4000	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Benzo(k)fluoranthene	000207-08-9	...	1.0E+00	1.0E+00	2.0E-05	2.0E-05	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	...	...	6	0.0000	Yes	Yes

* Indicates difference between previous version of chemical data (DEC91) and current version of chemical data.

HAZARD RANKING SYSTEM
Reasonable Substance Factor Values
(305 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Reactivity: Fresh	Reactivity: Salt	Air Gas Migration	Air Gas Mobility	Gas	Part
Cadmium	007440-43-9	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	1000	1000	NA	NA	No	Yes
Captan	000133-06-2	10	1.0E+00	1.0E-02	2.0E-01	2.0E-05	0.0007	0.0700	50.0	50.0	50.0	50.0	10000	10000	6	0.0200	Yes	Yes
Carbaryl	000063-25-2	10	1.0E+00	1.0E+00	2.0E-01	2.0E-01	0.4000	0.0700	50.0	50.0	5.0	5.0	10000	10000	0	0.0070	Yes	Yes
Carbofuran	001563-66-2	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	50.0	50.0	50.0	50.0	...	...	11	1.0000	Yes	No
Carbon disulfide	000075-15-0	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	0.5	0.5	0.5	0.5	100	100	17	1.0000	Yes	No
Carbon Tetrachloride	000056-23-5	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	10	100	17	1.0000	Yes	No
Carbophenothion	000786-19-6	100	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	10000	10000	NA	NA	No	Yes
Chlorat	000075-07-6	1000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Chlordane	000057-74-9	10000	1.0E+00	1.0E-04	2.0E-05	2.0E-07	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	10000	10000	6	0.0020	Yes	Yes
Chlorine cyanide	000506-77-4	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	10000	10000	17	1.0000	Yes	No
Chloro-3-methylphenol, 6-	000059-50-7	1	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	50.0	50.0	50.0	50.0	1000	1000	11	0.2000	Yes	Yes
Chloroaniline, p-	000106-47-8	1000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	0.4000	5.0	5.0	5.0	5.0	...	...	11	0.2000	Yes	Yes
Chlorobenzene	000108-90-7	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	5000.0	5000.0	1000	1000	17	1.0000	Yes	No
Chloroform	000067-66-3	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	10	10	17	1.0000	Yes	No
Chloromethane	000074-87-3	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.0007	0.0700	5.0	5.0	5.0	5.0	1	1	17	1.0000	Yes	No
Chloromethyl methyl ether	000107-30-2	1000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.0007	0.0007	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Chloromethylaniline, 2-	000106-09-8	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	0.5	0.5	0.5	0.5	10	10	17	1.0000	Yes	No
Chloronaphthalene, 2-	000091-58-7	10	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	500.0	500.0	500.0	500.0	...	...	11	0.2000	Yes	Yes
Chlorophenol, 2-	000095-57-8	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.4000	500.0	500.0	500.0	500.0	100	100	11	1.0000	Yes	No

* Indicates difference between previous version of chemical data (12/91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(395 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioconcentration: Food Chain: Fresh	Bioconcentration: Food Chain: Salt	Bioconcentration: Environmental: Fresh	Bioconcentration: Environmental: Salt	Soluble: Fresh	Soluble: Salt	Air Gas Migration	Air Gas Mobility	Gas	Part
Chlorpyrifos	002921-88-2	1000	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	10000	10000	NA	NA	No	Yes
Chromium	007440-47-3	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5.0	500.0	5.0	500.0	10000	10	NA	NA	No	Yes
Chromium(III)	016065-83-1	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	500.0	500.0	500.0	500.0	10	10	NA	NA	No	Yes
Chromium(VI)	018540-29-9	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5.0	500.0	5.0	500.0	100	100	NA	NA	No	Yes
Chrysene	000218-01-9	...	1.0E+00	1.0E-04	2.0E-05	2.0E-09	1.0000	1.0000	500.0	500.0	500.0	500.0	...	...	6	0.0000	Yes	Yes
Cobalt	007440-48-4	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	...	...	NA	NA	No	Yes
Copper	007440-50-8	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	100	1000	NA	NA	No	Yes
Copper cyanide	000544-92-3	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	500.0	500.0	500.0	500.0*	...	...	NA	NA	No	Yes
Coumaphos	000056-72-4	100	1.0E+00	1.0E-04	2.0E-01	2.0E-05	0.4000	0.4000	500.0	500.0	500.0	500.0	10000	1000	NA	NA	No	Yes
Creosote	008001-58-9	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1	1	NA	NA	No	Yes
Cresol, m-	000108-39-4	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5.0	5.0	5.0	5.0	100	100	11	1.0000	Yes	No
Cresol, p-	000106-44-5	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	0.4000	500.0	500.0	5000.0	5000.0	100	100	11	1.0000	Yes	No
Cumene	000098-82-8	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-05	0.4000	1.0000	500.0	500.0	500.0	500.0	100	1	17	1.0000	Yes	No
Cyanazine	021725-46-2	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.0700	50.0	50.0	50.0	50.0	...	...	0	0.0000	Yes	Yes
Cyanide	000057-12-5	100	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1000	1000	NA	NA	No	Yes
Cyanogen	000460-19-5	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Cyanogen bromide	000506-68-3	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1000	1000	NA	NA	No	Yes
Cyclohexane	000110-82-7	1	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	1.0000	500.0	500.0	500.0	500.0	10	100	17	1.0000	Yes	No
Cyclohexanone	000108-94-1	1	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	5.0	5.0	5.0	5.0	...	...	11	1.0000	Yes	No

* Indicates differences between previous version of chemical data (12/91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(305 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Contingency: Fresh	Contingency: Salt	Air Gas Migration	Air Gas Mobility	Gas	Part
Dichloroethane, 1,2-	000107-06-2	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	1	1	17	1.0000	Yes	No
Dichloroethane, 1,1-	000075-35-4	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	10	1	17	1.0000	Yes	No
Dichloroethylene, cis-1,2-	000156-59-2	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	...	...	17	1.0000	Yes	No
Dichloroethylene, trans-1,2-	000156-60-5	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	50.0	50.0	50.0	50.0	...	...	17	1.0000	Yes	No
Dichlorophenol, 2,4-	000120-83-2	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	0.4000	500.0	500.0	500.0	500.0	10000	10000	11	0.2000	Yes	Yes
Dichlorophenoxyacetic acid, 2,4-	000094-75-7	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	50.0	50.0	50.0	50.0	100	100	0	0.0000	Yes	Yes
Dichloropropane, 1,2-	000078-87-5	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	50.0	50.0	50.0	50.0	10	1	17	1.0000	Yes	No
Dichloropropene, 1,3-	000542-75-6	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.4000	5.0	5.0	5.0	5.0	100	100	17	1.0000	Yes	No
Dichlorvos	000062-73-7	1000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	5.0	5.0	5.0	5.0	10000	10000	11	0.2000	Yes	Yes
Dicofol	000115-32-2	10	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	10000	1000	NA	NA	No	Yes
Dieldrin	000060-57-1	10000	1.0E+00	1.0E-04	2.0E-03	2.0E-07	1.0000	1.0000	50000.0	5000.0	50000.0	5000.0	10000	10000	6	0.0000	Yes	Yes
Diethyl phthalate	000084-66-2	1	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	500.0	500.0	500.0	500.0	10000	10000	11	0.2000	Yes	Yes
Diethylene glycol	000111-46-6	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	0.5	0.5	0.5	0.5	...	...	11	0.2000	Yes	Yes
Diisopropylmethyl-phosphonate	001445-75-6	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Dimethoate	000060-51-5	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	0.5	0.5	0.5	0.5	10000	1000	0	0.0000	Yes	Yes
Dimethoxybenzidine, 3,3-	000119-90-4 *	10	1.0E+00	1.0E-02	2.0E-01	2.0E-03	1.0000	1.0000	5.0	5.0	5.0	5.0	...	...	0	0.0000	Yes	Yes
Dimethyl phenol, 2,4-	000105-67-9	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	500.0	500.0	500.0	500.0	100	100	11	0.2000	Yes	Yes
Dimethyl phthalate	000131-11-3	1	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	0.4000	50.0	50.0	50.0	50.0	10	10	11	0.2000	Yes	Yes
Dimethyl sulfate	000077-78-1	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.0007	0.0700	5.0	5.0	5.0	5.0	100	10	11	1.0000	Yes	No

* Indicates difference between previous version of chemical data (OCT91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(305 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Bioassay: Fresh	Bioassay: Salt	Air Gas Migration	Air Gas Mobility Gas	Air Gas Part
Hexachlorocyclohexane, alpha-	608319-84-6	10000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	1.0000	1.0000	500.0	500.0	5000.0	500.0	1000	1000	11	0.0000	Yes Yes
Hexachlorocyclohexane, beta-	608319-85-7	100	1.0E+00	1.0E-02	2.0E-03	2.0E-05	1.0000	1.0000	500.0	500.0	5000.0	5000.0	...	...	6	0.0000	Yes Yes
Hexachlorocyclohexane, delta-	608319-86-8	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	1.0000	1.0000	5.0	500.0	5000.0	500.0	...	...	6	0.0000	Yes Yes
Hexachlorocyclopentadiene	000077-47-4	10000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	1.0000	1.0000	5000.0	5000.0	50.0	50.0	10000	10000	17	0.2000	Yes Yes
Hexachloroethane	000067-72-1	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	1.0000	500.0	500.0	500.0	500.0	1000	1000	17	1.0000	Yes No
Hexachlorophene	000070-30-4	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	10000	10000	NA	NA	No Yes
Hexane	000110-54-3	10	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	1.0000	500.0	500.0	500.0	500.0	...	...	17	1.0000	Yes No
Hydrazine	000302-01-2	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	0.4000	0.5	0.5	0.5	0.5	10000	100	17	1.0000	Yes No
Hydrochloric acid	007647-01-0	1000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1	1	NA	NA	No Yes
Hydrogen cyanide	000074-90-8	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.0700	0.0700	0.5	0.5	0.5	0.5	10000	10000	17	1.0000	Yes No
Hydrogen sulfide	007783-06-4	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	0.5	0.5	0.5	0.5	1000	1000	17	1.0000	Yes No
Hexyl	001609-53-4	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	0.0700	500.0	500.0	500.0	500.0	...	...	NA	NA	No Yes
Iron	015438-31-0	...	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	0.5	0.5	0.5*	10	10	NA	NA	No Yes
Isobutanol	000078-83-1	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	0.5	0.5	0.5	0.5	10	1	17	1.0000	Yes No
Isophorone	000078-59-1	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	5.0	5.0	5.0	5.0	1	1	11	1.0000	Yes No
Kepone	000143-50-0	10000	1.0E+00	1.0E+00	2.0E-01	2.0E-01	0.4000	0.0700	50000.0	50000.0	50000.0	50000.0	...	...	0	0.0000	Yes Yes
Lead	007439-92-1	10000	1.0E+00	1.0E-02	2.0E-03	2.0E-05	1.0000	1.0000	50.0	5000.0	5000.0	5000.0	1000	1000	NA	NA	No Yes
Lindane	000058-89-9	10000	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	500.0	500.0	500.0	500.0	10000	10000	11	0.0000	Yes Yes
Malathion	000121-75-5	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	10000	10000	0	0.0000	Yes Yes

* Indicates difference between previous version of chemical data (OCT91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(309 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Stability: Fresh	Stability: Salt	Air Gas Migration	Air Gas Mobility	Gas	Part
Maleic anhydride	000108-31-6	10	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1	1	11	1.0000	Yes	No
Maleic hydrazide	000123-33-1	1	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Manganese	007439-96-5	10000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	50000.0	5000.0	50000.0	50000.0	...	...	NA	NA	No	Yes
Mercury	007439-97-6	10000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	10000	10000	11	0.2000	Yes	Yes
Methacrylonitrile	000126-98-7	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Methanol	000067-56-1	1	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	0.4000	0.5	0.5	0.5	0.5	1	1	11	1.0000	Yes	No
Methomyl	016752-77-5	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Methoxychlor	000072-43-5	100	1.0E+00	1.0E-04	2.0E-05	2.0E-07	1.0000	1.0000	50000.0	5000.0	50000.0	50000.0	10000	10000	4	0.0000	Yes	Yes
Methyl chlorocarbonate	000079-22-1	100	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Methyl ethyl ketone	000078-93-3	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.4000	0.5	0.5	0.5	0.5	1	1	17	1.0000	Yes	No
Methyl isobutyl ketone	000108-10-1	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	1	1	17	1.0000	Yes	No
Methyl methacrylate	000080-62-6	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	1	1	17	1.0000	Yes	No
Methylene bis (2-chloroaniline), 4,4-	000101-14-4	1000	1.0E+00	1.0E-04	2.0E-01	2.0E-05	0.4000	0.0700	500.0	500.0	500.0	500.0	...	...	8	0.0002	Yes	Yes
Methylene chloride	000075-09-2	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	1	1	17	1.0000	Yes	No
Methylenediphenyl diisocyanate, 4,4-	000101-68-8	10000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	8	0.0000	Yes	Yes
Metribuzin	021087-64-9	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	5.0	5.0	5.0	5.0	...	...	17	1.0000	Yes	No
Mirex	000300-00-9	10000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	50000.0	50000.0	50000.0	50000.0	10000	10000	NA	NA	No	Yes
Naphthalene	000091-20-3	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-05	0.4000	0.4000	500.0	5.0	500.0	500.0	1000	1000	11	0.2000	Yes	Yes
Nickel	007440-02-0	10000	1.0E+00	1.0E-02	2.0E-05	2.0E-05	1.0000	1.0000	0.5	500.0	500.0	500.0	10	1000	NA	NA	No	Yes

* Indicates difference between previous version of chemical data (OCT91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(307 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Ecotoxicity: Fresh	Ecotoxicity: Salt	Air Gas Migration	Air Gas Mobility Gas	Part
Quinoline	000091-22-5	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	0.5	5.0	5.0	1000	1000	11	0.2000	Yes	Yes*
Resorcinol	000108-46-3	10	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	5.0	5.0	5.0	5.0	...	...	6	0.0200	Yes	Yes
Rotenone	000299-84-3	10	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	1000	1000	NA	NA	No	Yes
Selenium	007782-49-2	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	5000.0	50.0	5000.0	50.0	100	100	NA	NA	No	Yes
Selenourea	000630-10-4	100	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	NA	NA	No	Yes
Silver	007440-22-4	1000	1.0E+00	1.0E-02	2.0E-05	2.0E-07	1.0000	1.0000	50.0	50.0	50.0	50.0	10000	10000	NA	NA	No	Yes
Silver Cyanide	000506-64-9	10	1.0E+00	1.0E-02	2.0E-05	2.0E-07	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0*	...	...	NA	NA	No	Yes
Sodium	007440-23-5	...	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	1.0000	0.5	0.5	0.5	0.5*	...	...	NA	NA	No	Yes
Strychnine	000057-24-9	10000	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	5.0	5.0	5.0	5.0	1000	1000	NA	NA	No	Yes
Styrene	000100-42-5	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	10	10	17	1.0000	Yes	No
Sulfuric acid	007664-93-9	1000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	10	10	NA	NA	No	Yes
TB, 2,4,5-	000093-80-1	...	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.0700	500.0	500.0	500.0	500.0	...	...	0	0.0000	Yes	Yes
TCDD	001746-01-6	10000	1.0E+00	1.0E-04	2.0E-05	2.0E-09	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	...	...	6	0.0002	Yes	Yes
Tetrachlorobenzene, 1,2,4,5-	000095-94-3	10000	1.0E+00	1.0E-04	2.0E-03	2.0E-07	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	100	100	17	0.2000	Yes	Yes
Tetrachloroethane, 1,1,1,2-	000630-20-6	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.4000	50.0	50.0	50.0	50.0	10	10	17	1.0000	Yes	No
Tetrachloroethane, 1,1,2,2-	000079-34-5	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	5.0	5.0	5.0	5.0	100	100	11	1.0000	Yes	No
Tetrachloroethene	000127-18-4	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	100	100	17	1.0000	Yes	No
Tetrachlorophenol, 2,3,4,6-	*000058-90-2	100	1.0E+00	1.0E-04	1.0E+00	1.0E-04	1.0000	1.0000	500.0	500.0	500.0	500.0	1000	100	11	0.2000	Yes	Yes
Tetraethyl lead	000078-00-2	10000	1.0E+00	1.0E+00	2.0E-03	2.0E-03	0.0700	0.0700	500.0	500.0	500.0	500.0	100	10000	17	1.0000	Yes	No

* Indicates difference between previous version of chemical data (OCT91) and current version of chemical data.

HAZARD RANKING SYSTEM
Hazardous Substance Factor Values
(305 Substances)

Substance Name	CAS Number	Toxicity	Ground Water Mobility: Liquid: Karst	Ground Water Mobility: Liquid: Non-Karst	Ground Water Mobility: Non-Liquid: Karst	Ground Water Mobility: Non-Liquid: Non-Karst	Persistence: River	Persistence: Lake	Bioaccumulation: Food Chain: Fresh	Bioaccumulation: Food Chain: Salt	Bioaccumulation: Environmental: Fresh	Bioaccumulation: Environmental: Salt	Ecotoxicity: Fresh	Ecotoxicity: Salt	Air Gas Migration	Air Gas Mobility Gas	Air Gas Mobility Part
Tetraethyldithiopyrophosphate	003689-24-5	1000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	10000	10000	NA	NA	No	Yes
Tetrahydrofuran	000109-99-9	1	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	1.0000	0.5	0.5	0.5	0.5	...	...	17	1.0000	Yes	No
Thallium	007440-28-0	10000	1.0E+00	1.0E-04	1.0E+00	1.0E-04	1.0000	1.0000	500.0	50.0	500.0	50.0	...	...	NA	NA	No	Yes
Thiourea	000062-56-6	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	0.4000	0.0700	0.5	0.5	0.5	0.5	...	...	6	0.0000	Yes	Yes
Thiram	000137-26-8	100	1.0E+00	1.0E+00	2.0E-01	2.0E-01	0.4000	0.0700	5000.0	5000.0	5000.0	5000.0	...	...	NA	NA	No	Yes
Toluene	000108-88-3	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.4000	50.0	50.0	50.0	50.0	100	100	17	1.0000	Yes	No
Toluene diisocyanate	000584-84-9	1000	1.0E+00	1.0E+00	2.0E-05	2.0E-05	0.4000	0.0700	0.5	0.5	0.5	0.5	1	1	11	0.2000	Yes	Yes
Toxaphene	008001-35-2	1000	1.0E+00	1.0E-02	2.0E-05	2.0E-05	1.0000	1.0000	50000.0	50000.0	50000.0	50000.0	10000	10000	6	0.0000	Yes	Yes
TP, 2,4,5-	000093-72-1	100	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	0.0700	500.0	500.0	500.0	500.0	1000	1000	0	0.0000	Yes	Yes
Tribromomethane	000075-25-2	100	1.0E+00	1.0E+00	1.0E+00	1.0E+00	1.0000	1.0000	50.0	50.0	50.0	50.0	10	10	11	1.0000	Yes	No
Trichloro-1,2,2-Trifluoroethane, 1,1,2-	000076-13-1	1	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	...	...	17	1.0000	Yes	No
Trichlorobenzene, 1,2,4-	000120-82-1	1000	1.0E+00	1.0E-02	2.0E-01	2.0E-03	0.4000	1.0000	500.0	500.0	500.0	500.0	1000	100	17	1.0000	Yes	No
Trichloroethane, 1,1,1-	000071-55-6	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	5.0	5.0	5.0	5.0	10	10	17	1.0000	Yes	No
Trichloroethane, 1,1,2-	000079-00-5	1000	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	10	10	17	1.0000	Yes	No
Trichloroethylene	000079-01-6	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	10	10	17	1.0000	Yes	No
Trichlorofluoromethane	000075-69-4	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	0.4000	1.0000	50.0	50.0	50.0	50.0	...	...	17	1.0000	Yes	No
Trichlorophenol, 2,3,5-	000933-78-8	...	1.0E+00	1.0E-04	2.0E-01	2.0E-05	1.0000	1.0000	5000.0	5000.0	5000.0	5000.0	...	...	6	0.0000	Yes	Yes
Trichlorophenol, 2,3,6-	000933-75-5	...	1.0E+00	1.0E-02	2.0E-01	2.0E-03	1.0000	1.0000	500.0	500.0	500.0	500.0	...	...	6	0.0000	Yes	Yes
Trichlorophenol, 2,4,5-	000095-95-4	10	1.0E+00	1.0E-02	1.0E+00	1.0E-02	1.0000	0.4000	500.0	500.0	5000.0	5000.0	1000	1000	11	0.2000	Yes	Yes

* Indicates difference between previous version of chemical data (DEC91) and current version of chemical data.

REFERENCE NO. 25

State of New Jersey
Department of Environmental Protection and Energy
Division of Parks and Forestry
Office of Natural Lands Management
CN 404 Trenton New Jersey 08625-0404
(609) 984-1339
FAX (609) 984-1427

Scott A. Weiner
Commissioner

March 10, 1992

Frederick V. Loneker
Malcom Pirnie, Inc.
104. Interchange Plaza
Cranbury, NJ 08512-9543

Re: Aetna Chemical Corporation Site and Downstream Waterways

Dear Mr. Loneker:

Thank you for your data request regarding rare species information for the above referenced project site in Bergen, Essex, Hudson and Passaic Counties.

The Natural Heritage Data Base does not have any records for rare plants, animals or natural communities on the Aetna Chemical Corporation site, or in the waterways that you outlined around this site. Attached is a list of rare species from records in the general vicinity of the Aetna site (within approximately 4 miles).

Also attached are lists of rare vertebrates of Bergen, Essex, Hudson and Passaic Counties together with descriptions of their habitats. If suitable habitat is present at the project site, these species would have potential to be present. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend you contact the Division of Fish, Game and Wildlife Endangered and Nongame Species Program.

PLEASE SEE THE ATTACHED 'CAUTIONS AND RESTRICTIONS ON NHP DATA'.

Thank you for consulting the Natural Heritage Program. The fee to cover the cost of processing this data request is $40.00. Payment should be made payable to Treasurer, State of New Jersey and mailed to Office of Natural Lands Management, DEPE Div. of Parks and Forestry, CN404, Trenton, NJ 08625-0404. To ensure that your payment is properly credited, please provide a copy of this letter with your remittance. Feel free to contact us again regarding any future data requests.

Sincerely,

Thomas F. Breden
Coordinator/Ecologist
Natural Heritage Program

cc: JoAnn Frier-Murza
Thomas Hampton

Printed on recycled paper

REFERENCE NO. 26

ARCS II CONTRACT 68-W9-0051
MALCOLM PIRNIE, INC.
RECORD OF TELEPHONE CONVERSATION/AGREEMENT

File No. 8002-084

Date: 2/27/92 Time: 3:40 [ ] AM [X] PM

[ ] Incoming Call From: _____ Telephone No.

Affiliation: _____

[X] Outgoing Call To: Don Kroeck (609)-292-7219 Telephone No.

Affiliation: DEP

Malcolm Pirnie Staff: Lisa Szegedi (609)-860-0100
(Receiving or Calling) Name Telephone No.

Summary of [X] Conversation [ ] Agreement:

There are no intakes on the Passaic River
Past Little Falls all the way downstream
The Rockaway River has no intakes
upstream of the Boonton Reservoir
The only intake on the Raritan River
is located at Raritan and Millstone

f:\rectele.jan(1)

REFERENCE NO. 27

MALCOLM PIRNIE

MALCOLM PIRNIE, INC.
ENVIRONMENTAL ENGINEERS, SCIENTISTS & PLANNERS

March 23, 1992

Mr. Robert Baldanzi
Aetna Chemical Corporation
Wallace Street Extension
Elmwood Park, NJ 07407

Dear Mr. Baldanzi:

Malcolm Pirnie, Inc. (MPI) is a duly authorized consultant for, and representative of, the Environmental Protection Agency (EPA). Services provided by MPI include pre-remedial investigations such as Preliminary Assessments and Site Inspections. The statutory basis for these investigations are contained in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA).

MPI is presently conducting a Site Inspection Prioritization (SIP) Evaluation of the Aetna Chemical Corporation, EPA ID No. NJD001471374. The original site inspection was performed by the New Jersey Department of Environmental Protection - Division of Hazardous Waste Management, Bureau of Planning and Assessment on February 2, 1990.

In order to complete an evaluation of your facility, MPI is requesting the following information:

- The number of people presently working at the Aetna Chemical Corporation Facility in Elmwood Park.

If you have any questions regarding this request, please contact me at (609) 860-0100.

Very truly yours,

John D. Rieckhoff
Malcolm Pirnie, Inc.

3/25/92

Dear Mr. Rieckhoff:

Aetna Chemical presently employees fourteen people.

Very truly yours,

Vincent J. Sorce Jr.
Bookkeeper

/vjs
CC: Capell Risk Management
Goldshore, Wolf & Lewis

104 INTERCHANGE PLAZA CRANBURY, NJ 08512-9543 609-860-0100 FAX: 609-860-0250

REFERENCE NO. 28

SITE INSPECTION

Aetna Chemical

ELMWOOD PARK, BERGEN COUNTY

EPA ID No.: NJD001471374

New Jersey Department of Environmental Protection
Division of Hazardous Waste Management
Bureau of Planning and Assessment

AETNA CHEMICAL
WALLACE STREET EXTENSION
ELMWOOD PARK, BERGEN COUNTY, NEW JERSEY
EPA ID NO. NJD001471374

TABLE OF CONTENTS

NARRATIVE

MAPS

1. USGS PATERSON AND HACKENSACK QUADRANGLES
2. SITE MAP
3. TAX MAP
4. BERGEN COUNTY ROAD MAP
5. NEW JERSEY ATLAS BASE MAP, SHEET NOS. 23 AND 26
6. NEW JERSEY ATLAS GEOLOGIC OVERLAY, SHEET NOS. 23 AND 26
7. NEW JERSEY ATLAS WATER SUPPLY MAP, SHEET NOS. 23 AND 26
8. WATER WITHDRAWAL POINTS MAP

ATTACHMENTS

A. MEMO RE: PRE-SAMPLING ASSESSMENT, FEBRUARY 2, 1990
B. AETNA SALES PAMPHLET
C. ELMWOOD PARK HEALTH DEPARTMENT INDUSTRIAL SURVEY, JUNE 20, 1983
D. INCIDENT REPORT, MARCH 14, 1984
E. LETTER RE: NITRIC ACID LEAK, AUGUST 18, 1986
F. LETTER RE: VOC CONTAMINATION IN GARFIELD'S WELLS, JUNE 14, 1989
G. LETTER RE: CLOSING OF GARFIELD'S WELLS, MARCH 22, 1989
H. SAMPLING DATA FROM APRIL 19, 1990
I. MEMO RE: QA/QC REPORT, AUGUST 8, 1990

NARRATIVE

AETNA CHEMICAL
WALLACE STREET EXTENSION
ELMWOOD PARK, BERGEN COUNTY, NEW JERSEY
EPA ID NO. NJD001471374

GENERAL INFORMATION AND SITE HISTORY

Aetna Chemical is a 2.6-acre site located on Block 1405, Lot 1 in Elmwood Park, Bergen County. The site is in an industrial area with the Garden State Parkway to the west and northwest, Route 80 to the north, New York Southern and Western Railroad tracks to the south and Main Trucking to the east. Approximately 428,000 people live within 4 miles of the site.

Prior to 1960, when Aetna purchased the site, the land was vacant. Aetna has conducted chemical distribution operations since activities began on site.

SITE OPERATIONS OF CONCERN

Aetna Chemical is a distributor for producers of heavy and fine chemicals. This involves the warehousing and delivery of chemicals in the manufacturers' original containers and the repackaging of bulk chemicals. Products sold include acetone, chloroform, detergents, formaldehyde, hydrochloric acid, isopropanol, methyl ethyl ketone, naphtha, nitric acid, perchloroethylene, sodium compounds, mineral spirits, sulfuric acid, trichloroethylene, xylene, toluene, degreasers and fuel oil additives. Materials are stored in elevated aboveground storage tanks then transferred via overhead pipes into 55-gallon drums or sold in 5,000-gallon bulk quantities. Inside the building, 55-gallon drums are gravity filled from the aboveground storage tanks. Any material remaining in the fill tubes drips into an underlying bucket and is later poured into drums and sold as product. Aetna also blends and makes detergents for special orders.

The ten elevated aboveground storage tanks on site range in size from 6,000 to 25,000 gallons. The tanks contain isopropanol, acetone, heavy aromatic naphtha, methyl ethyl ketone, xylol, mineral spirits, toluene, chlorophene, hydrochloric acid, nitric acid, sulfuric acid, 1,1,1-trichloroethane or pale oil. Four of the tanks are within an unpaved diked area; the remainder have no containment system.

One 500-gallon underground fuel oil tank is present on site. On March 14, 1984, Aetna reported to the NJDEP that the fill cap to the tank was removed. Due to heavy rains, water entered the tank causing the fuel oil to be forced out. The oil spilled onto the parking lot, however, none reached the soil. The site was immediately cleaned up.

On August 8, 1986, the seal in a valve on the nitric acid 42% fill line leaked 25 to 30 gallons. Upon discovery of the leak, the line from the main tank was shut off. Soda ash was placed down to neutralize and absorb the nitric acid. The material was then swept up and put into two 55-gallon drums for disposal off site.

On February 2, 1990, the NJDEP, Division of Hazardous Waste Management (DHWM), Bureau of Planning and Assessment (BPA) conducted a Pre-sampling Assessment (PSA) at Aetna. During the PSA, numerous soil gas readings above background were noted on the Organic Vapor Analyzer (OVA) as

calibrated to methane. The highest soil gas readings, 55 ppm to greater than 1,000 ppm, were around the aboveground storage tanks. Lower readings were obtained near the loading docks. Ambient air was 8 ppm in the area of the aboveground storage tanks. The drum storage area was not contained. Near the 55-gallon drum fill area, a hole in the wall of the building was observed. From outside the building, it appeared as if a runoff pathway from the hole to the soil existed.

On April 19, 1990, the NJDEP, DHWM, BPA collected nine soil and two sediment samples on site. Samples were collected from various areas underlying the elevated tanks. Details of the sampling episode will be discussed below.

GROUNDWATER ROUTE

Site specific hydrogeology was not available, therefore, regional hydrogeology will be discussed. Up to 25 feet of unconsolidated deposits consisting of silts, sands and red-brown glacial till underlie the site. The till is a heterogeneous mixture of rounded gravel, sand, silt and clay. Beneath the unconsolidated deposits are the late Triassic Age sandstones and shales of the Brunswick Formation. The materials comprising the Brunswick Formation are relatively impermeable, but the formation has excellent water bearing properties due to the high secondary porosity resulting from fracturing in the rock. This formation may be as thick as 2,000 feet.

Groundwater at the site may be as shallow as 4 feet below the land surface in the unconsolidated silts and clays. Shallow groundwater flow is generally toward the west and northwest. Discharge of shallow groundwater is through vertical leakage to the underlying Brunswick Formation. The Brunswick Formation is used as a public potable and industrial water supply.

No monitoring wells or present on site nor does Aetna maintain a NJPDES Discharge to Groundwater Permit.

In March 1989, the Garfield Department of Public Works (GDPW) closed all its public supply wells due to volatile organic contamination. Contaminants included trichloroethylene and perchloroethylene. One of the GPDW's wellfields is located in Elmwood Park, approximately 0.8 mile northwest of Aetna. Currently, Elmwood Park and Garfield receive their water from the Passaic Valley Water Commission (PVWC). The PVWC draws its water from the Passaic River near Little Falls, New Jersey and the Wanaque Reservoir. Restarting the wells is planned after air strippers are constructed.

Public water supply systems using groundwater within 4 miles of the site include Fair Lawn Borough, Lodi Borough, Wallington Borough, Ridgewood Village and Hackensack. All wells are screened in the Brunswick Formation and are 300 to 600 feet deep. The population served by groundwater within 4 miles of the site is approximately 145,000. In addition to the municipal wells, industrial and private potable wells are located within 4 miles of the site. The number of private potable wells and the quantity of people served is unknown.

A potential for groundwater contamination exists as numerous contaminants were detected in soil samples collected on site. Aetna could potentially be a responsible party to the contamination of the Garfield wells in Elmwood Park.

SURFACE WATER ROUTE

No downslope surface water bodies to which contaminants from the site can migrate are present within 4 miles of the site. A drainage ditch runs along part of the property boundaries, however, it stops on the north side of the property. Two sediment samples collected from the ditch during the April 19, 1990 NJDEP, DHWM, BPA sampling episode, indicated contamination with 1,1,1-trichloroethane, bis (2-ethylhexyl) phthalate, 1,1-dichloroethylene, naphthalene, 2-methylnaphthalene, metals and numerous other base neutral/acid extractables.

There are no wetlands areas or federally endangered species habitats within 1 mile of the site.

AIR ROUTE

Aetna has never been issued air pollution certificates. During site visits by the NJDEP, DHWM, BPA on February 2, 1990 and April 19, 1990, ambient air was noted to be 8 ppm on the OVA as calibrated to methane in the aboveground storage tank area.

A potential for air contamination exists due to operations on site and materials handled at the site.

SOIL

Soil samples were collected in various areas throughout the aboveground storage tank area on April 19, 1990 by the NJDEP, DHWM, BPA. All samples were collected at a depth of 0 to 6 inches. Many of the samples were collected from areas of stained soil. Numerous contaminants including 1,1,1-trichloroethane, toluene, xylene, naphthalene, 2-methylnaphthalene, barium, lead, cadmium, ethylbenzene and perchloroethylene were detected in the samples. Details of the sampling episode will be discussed in the Summary of Sampling Data section of this report.

DIRECT CONTACT

No incidents of direct contact have been documented. A potential for direct contact exists as numerous contaminants were detected in the on-site surface soil. The site is not fenced, therefore, accessible by the public.

FIRE AND EXPLOSION

There have been no reported incidents of fire or explosion at the site, however, a potential exists due to the materials handled on site.

ADDITIONAL CONSIDERATIONS

No vegetation was observed in the area of the aboveground storage tanks during the site visits by the NJDEP, DHWM, BPA on February 2, 1990 and April 19, 1990. A potential for damage to fauna exists due to contaminated soil on site. Due to the bioaccumulative properties of the contaminants detected on site, a potential for contamination of the food chain exists.

There is a potential for damage to off-site property if contaminants migrate off site.

SUMMARY OF SAMPLING DATEA

1. Sampling date: April 19, 1990
   Sampled by: NJDEP, DHWM, BPA
   Trenton, New Jersey
   Samples: Ten soil and two sediment samples
   Laboratory: TCT (#64777)
   St. Louis, Missouri
   Parameters: Target Compound List + 30 peaks
   Sample description: All samples were collected at a depth of 0 to 6 inches. Sample locations are described below (refer to Site Map for tank numbers):

SAMPLE NO.	LOCATION
Soil-1	Under a valve on the south side of Tank 1.
Soil-2	West side of Tank 2, between the tank and the building. Red material was observed in the sample.
Soil-3	Between Tank 2 and Tank 3 and the building.
Soil-4	Outside the hole in the wall of the building.
Soil-5	Between the mid-points of Tank 3 and Tank 4.
Soil-6	In the yard area between the two group of tanks.
Soil-7	Northwest side of the diked tank farm.
Soil-8	Southwest side of the diked tank farm.
Soil-9	Near the empty drum storage area.
Soil-10	Duplicate of Soil-4.
SED-1	Swampy area on the south side of the building.
SED-2	In the drainage ditch near Main Trucking's driveway.

Contaminants detected: No pesticides or PCBs were detected in any of the samples. Contaminants detected are summarized in Table 1.

QA/QC:	Formal QA/QC review revealed the internal standard, perylene-d12, was outside the quality control limits for a method blank, therefore, all positive and non-detect results in Soil-1 were rejected for the semi-volatile fraction.
File location:	Attachment F NJDEP, DHWM, BPA Trenton, New Jersey

RECOMMENDATIONS/CONCLUSIONS

Due to the high concentrations of contaminants detected in the soil samples and the regional groundwater contamination problem, it is recommended that monitoring wells be installed on site. This case will be referred to the NJDEP, DHWM, Bureau of Metro Enforcement for further investigation including the installation and sampling of monitoring wells and the excavation of contaminated soil. Additionally, it is recommended that a paved, diked containment area be constructed around the aboveground storage tanks.

Submitted by:

Donna J. Restivo
HSMS III
Bureau of Planning and Assessment
August 20, 1990

TABLE

SITE: AETNA CHEMICAL
LOCATION: ELMWOOD PARK, BERGEN COUNTY

SUMMARY OF SAMPLING DATA
VOLATILES

DATE SAMPLED APRIL 19, 1990
SAMPLE NO.
MATRIX SOIL
UNITS ug/kg

	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Chloromethane												
Bromomethane												
Vinyl Chloride												
Chloroethane												
Methylene Chloride					87,000 J	2,200 J	290 J					
Acetone			26 J		210,000 J	6,500 J			510 J	1,800	130	
Carbon Disulfide							380 J					
1,1-Dichloroethene	3 J	17	4 J				680 J			190 J		14,00
1,1-Dichloroethane							310 J			2,500		
1,2-Dichloroethene							580 J					
Chloroform							350 J					
1,2-Dichloroethane												
2-Butanone			26 J									
1,1,1-Trichloroethane	11	68	310	4,800	27,000,000	2,600 J			4,600	370,000	280	
Carbon Tetrachloride							470 J					17,00
Xylenes			810	7,700	9,800,000	240,000	11,000	2,000	3,600	320,000	840	470,
Styrene				3,900								

9

SUMMARY OF SAMPLING DATA
VOLATILES (CONT.)

DATE SAMPLED	April 19, 1990											
SAMPLE NO.												
MATRIX	SOIL											
UNITS	ug/kg	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Vinyl Acetate													
Bromodichloromethane													
1,1,2,2-Tetrachloroethane													
1,2-Dichloropropane													
trans-1,3-Dichloropropene													
Trichloroethene								740J					25,000J
Dibromochloromethane													
1,1,2-Trichloroethane													
Benzene				2J				510J	170J				
cis-1,3-Dichloropropene													
Bromoform													
4-Methyl-2-Pentanone				61									
2-Hexanone													
Tetrachloroethene						90,000J		760				18	20,000J
Toluene				72		770,000	82,000	750	300J		170,000	23	110,000
Chlorobenzene								480J					
Ethylbenzene				42	330J	100,000	28,000	1,600	220J		18,000	100	71,000

SUMMARY OF SAMPLING DATA
SEMI-VOLATILE COMPOUNDS

DATE SAMPLED APRIL 19, 1990
SAMPLE NO.
MATRIX SOIL
UNITS ug/kg

	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Phenol												
bis(2-Chloroethyl) ether												
2-Chlorophenol												
1,3-Dichlorobenzene												
1,4-Dichlorobenzene												
Benzyl alcohol												
1,2-Dichlorobenzene												
2-Methylphenol												
bis(2-Chloroisopropyl) ether												
4-Methylphenol												
N-Nitroso-di-n-propylamine												
Hexachloroethane												
Nitrobenzene												
Isophorone												
2-Nitrophenol												
2,4-Dimethylphenol												
Benzoic acid												

SUMMARY OF SAMPLING DATA
SEMI-VOLATILE COMPOUNDS (CONT.)

DATE SAMPLED	April 19, 1990											
SAMPLE NO.	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
MATRIX	SOIL											
UNITS	ug/kg											
bis (2-Chloroethoxy) methane												
2,4-Dichlorophenol												
1,2,4-Trichlorobenzene												
Naphthalene		22,000	27,000	17,000J	810,000	13,000J	1,200	12,000		240,000	740J	11,000J
4-Chloroaniline												
Hexachlorobutadiene												
4-Chloro-3-methylphenol												
2-Methylnaphthalene		58,000	290,000	150,000	1,700,000	11,000J	6,600	34,000		1,300,000	2,000	18,000J
Hexachlorocyclopentadiene												
2,4,6-Trichlorophenol												
2,4,5-Trichlorophenol												
2-Chloronaphthalene												
2-Nitroaniline												
Dimethylphthalate												
Acenaphthylene												
2,6-Dinitrotoluene												

12

SUMMARY OF SAMPLING DATA
SEMI-VOLATILE COMPOUNDS (CONT.)

DATE SAMPLED	APRIL 19,1990											
SAMPLE NO.												
MATRIX	SOIL											
UNITS	ug/Kg	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
3-Nitroaniline													
Acenaphthene			1,200	11,000J	7,900J	20,000J		250J	1,400	3,300J	38,000		
2,4-Dinitrophenol													
4-Nitrophenol													
Dibenzofuran													
2,4-Nitrotoluene													
Diethylphthalate													
4-Chlorophenyl-phenylether													
Fluorene			1,500	12,000J	8,800J	21,000J		610	1,800	10,000J	67000		
4-Nitroaniline													
4,6-Dinitro-2-methylphenol													
N-Nitrosodiphenylamine													
4-Bromophenyl-phenylether													
Hexachlorobenzene													
Pentachlorophenol													
Phenanthrene			2,500	40,000	19,000J	34,000		1,800	5,200	19,000J	140,000	380J	3,800J
Anthracene				4,900J	3,200J	11,000J			540	3,500J	19,000J		

SUMMARY OF SAMPLING DATA
SEMI-VOLATILE COMPOUNDS (CONT.)

DATE SAMPLED APRIL 19, 1990
SAMPLE NO.
MATRIX SOIL
UNITS ug/kg

	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Di-n-butylphthalate	54J			3,100J	2,900J	17,000J	440	390	7,200J	14,000J		25,000J
Fluoranthene		1,800	12,000J	12,000J	8,900J		1,100	1,500	10,000J	44,000	420 J	2,800J
Pyrene		3,400	21,000J	14,000J	14,000J		1,500	2,400	16,000J	38,000	540 J	
Butylbenzylphthalate						4,400 J	390J	530		5,600 J		
3,3-Dichlorobenzidine												
Benzo (a) anthracene		1,000		4,900J	9,900J		520	650	5,400J	22,000J	500J	
Chrysene		1,400		6,000J	5,600J		690	940	6,100J	22,000J	502J	
bis(2-Ethylhexyl) phthalate	140	25,000	14,000J	25,000	12,000J	47,000	5,000	5,000	94,000	120,000	7,200	66,000
Di-n-octylphthalate		450					200 J	200J		4,900J		
Benzo (b) fluoranthene } combined		1,500		5,200J	5,400J		440	630		11,000J	1,100	
Benzo (k) fluoranthene } combined												
Benzo (a) pyrene		2,000					350J	420			1,000	
Indeno (1,2,3-cd) pyrene		1,100										
Dibenz (a,h) anthracene												
Benzo (g,h,i) perylene		7,600					280J			13,000J	2,500	

SUMMARY OF SAMPLING DATA
METALS

DATE SAMPLED	April 19, 1990											
SAMPLE NO.												
MATRIX	SOIL											
UNITS	mg/Kg	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Aluminum		8,960	8,830	7,130	4,330	603	527	453	715	4,150	6,030	11,800	300
Antimony													
Arsenic			4.1		4.6	2.7	2.7	6.0		2.1		13.6	2.5
Barium		2.8	1,810*	1,120*	6,000*	5,500*	121*	101	278*	466*	500*	2,070*	84.4
Beryllium						0.50				2.9		2.8	
Cadmium			2.9*	1.3*	2.5*					1.3	1.9	4.2	
Calcium			4,850		5,310					5,970	11,400	8,480	
Chromium		15.3	211*	10.6	49.8	17.1				19.3	22	90*	4.8
Cobalt					12.1								
Copper		17.6	187	18.0	58.7	18.3				32.1	19.6	113	7.6
Iron		40,600	22,900	10,100	17,500	10,100	7,720	4,190	5,570	49,100	13,800	46,300	8,160
Lead		25.8	2,500*	1,250*	13,500*	809*	35.1	60.5	49.2	181	186	1,580	28.6
Magnesium		1,290	2,510	1,410						3,090	8,360	4,710	
Manganese		86.3	369	841	4,890	56	33.8	13.1	223	1,710	9,240	1,460	36
Mercury			0.61*	0.18	0.21*	0.27*	0.18	0.11		0.19	0.13	1.2*	0.12
Nickel		15.6			15.8					14.1	11.0	30.8	
Potassium													

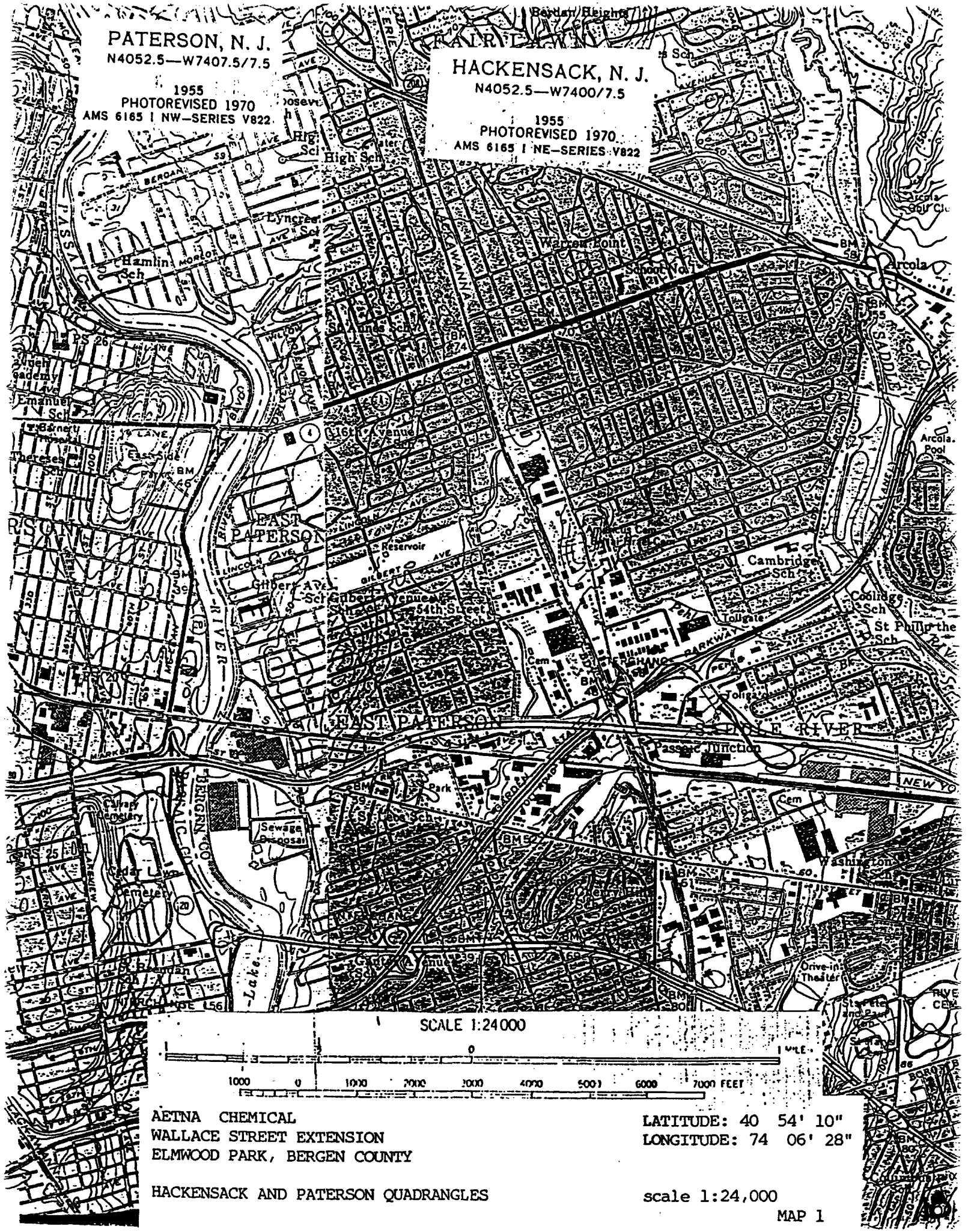
SUMMARY OF SAMPLING DATA
METALS (CONT.)

DATE SAMPLED	April 19, 1990											
SAMPLE NO.												
MATRIX	SOIL											
UNITS	mg/kg	SED-1	SED-2	SOIL-1	SOIL-2	SOIL-3	SOIL-4	SOIL-5	SOIL-6	SOIL-7	SOIL-8	SOIL-9	SOIL-10
Selenium													
Silver			4.0					2.7		3.6			
Sodium													
Thallium													
Vanadium		31.6	26.3	22.7	21.6					15.5	20.6	56.4	
Zinc		23.3	252	28.6	319*	42.5	6.2			118	119	403*	10.1
Cyanide						3.7*			0.64				0.85

Other * = Above NJDEP Action Levels

J = Value is estimated

MAPS



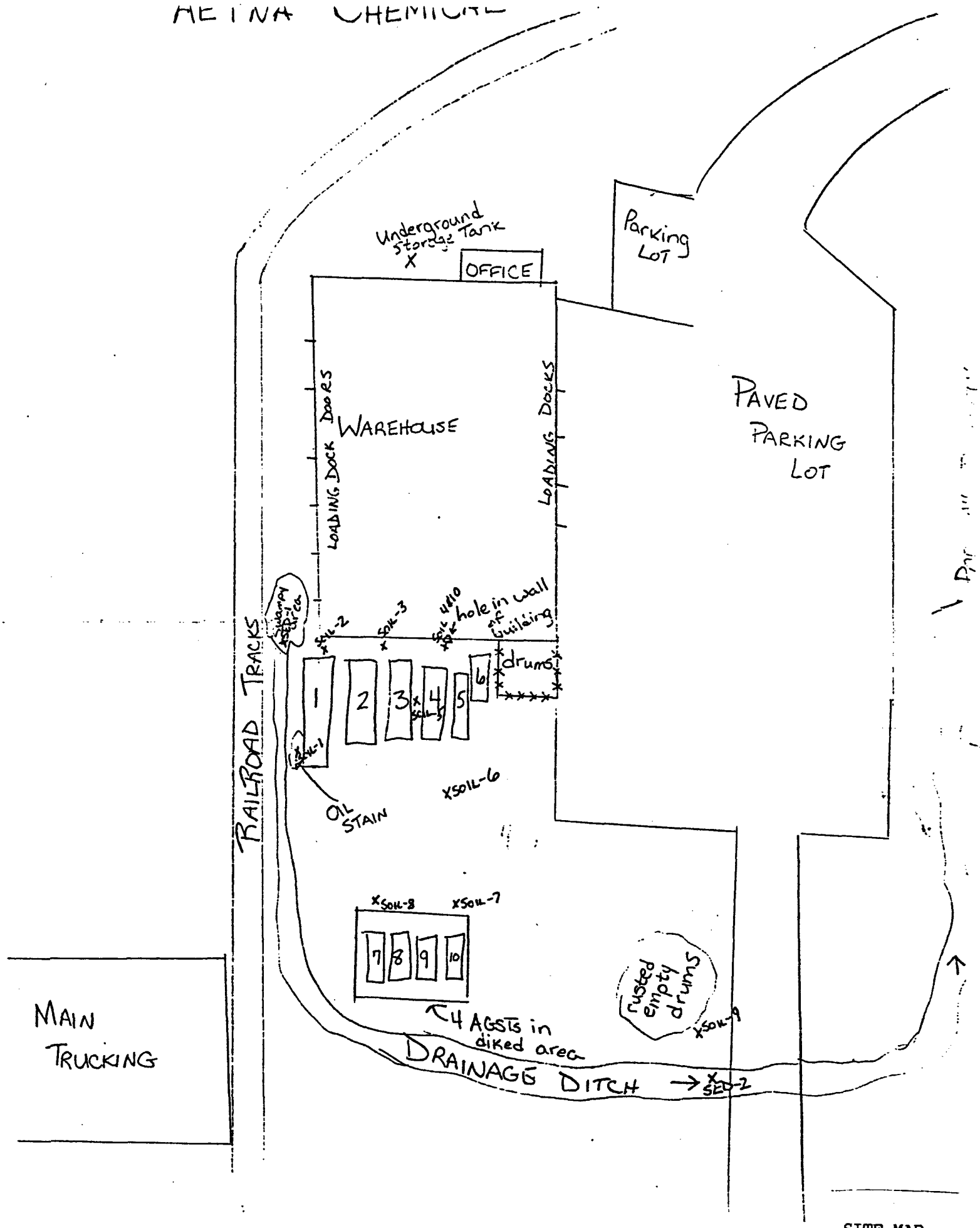
AETNA CHEMICAL
WALLACE STREET EXTENSION
ELMWOOD PARK, BERGEN COUNTY

LATITUDE: 40 54' 10"
LONGITUDE: 74 06' 28"

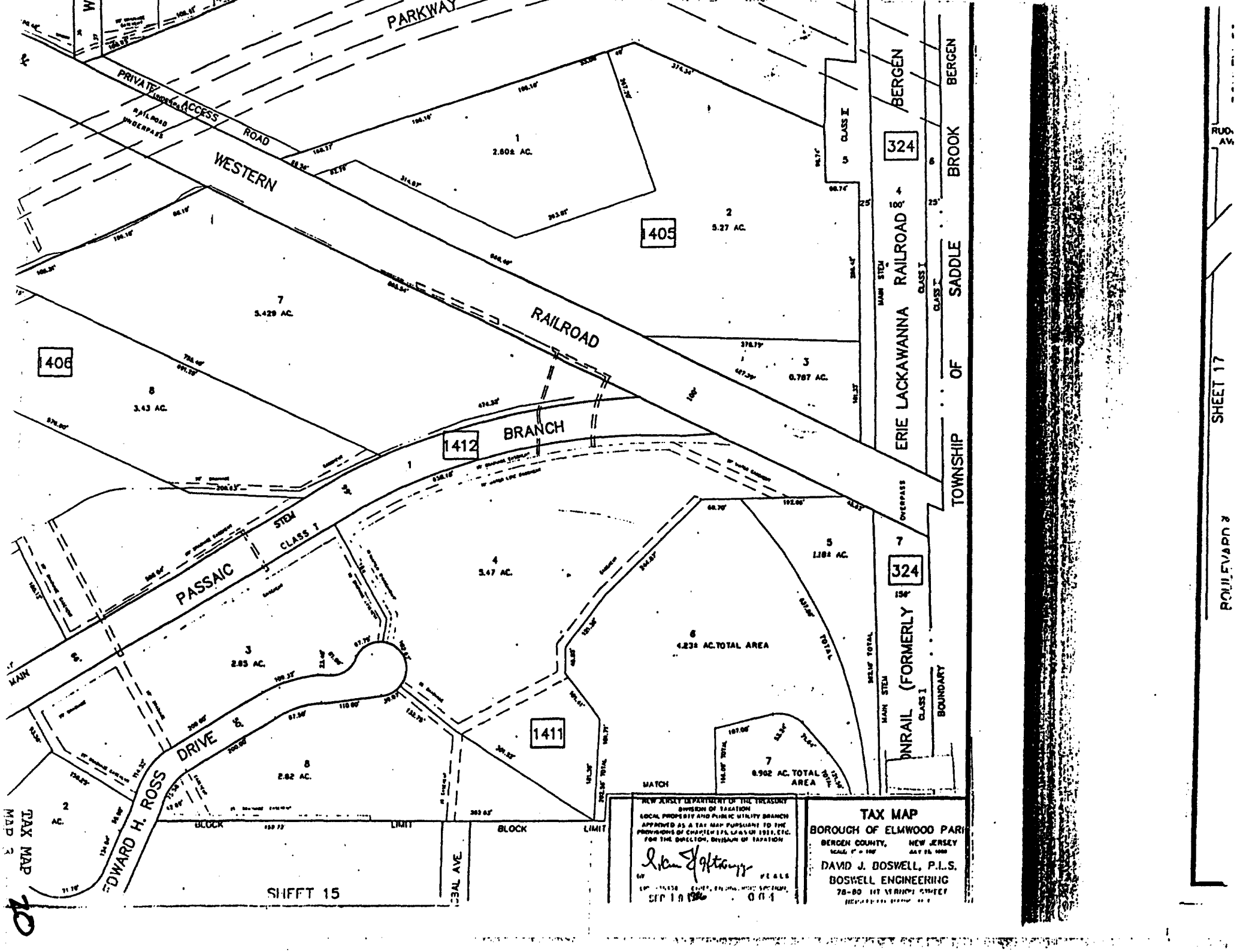
HACKENSACK AND PATERSON QUADRANGLES

scale 1:24,000

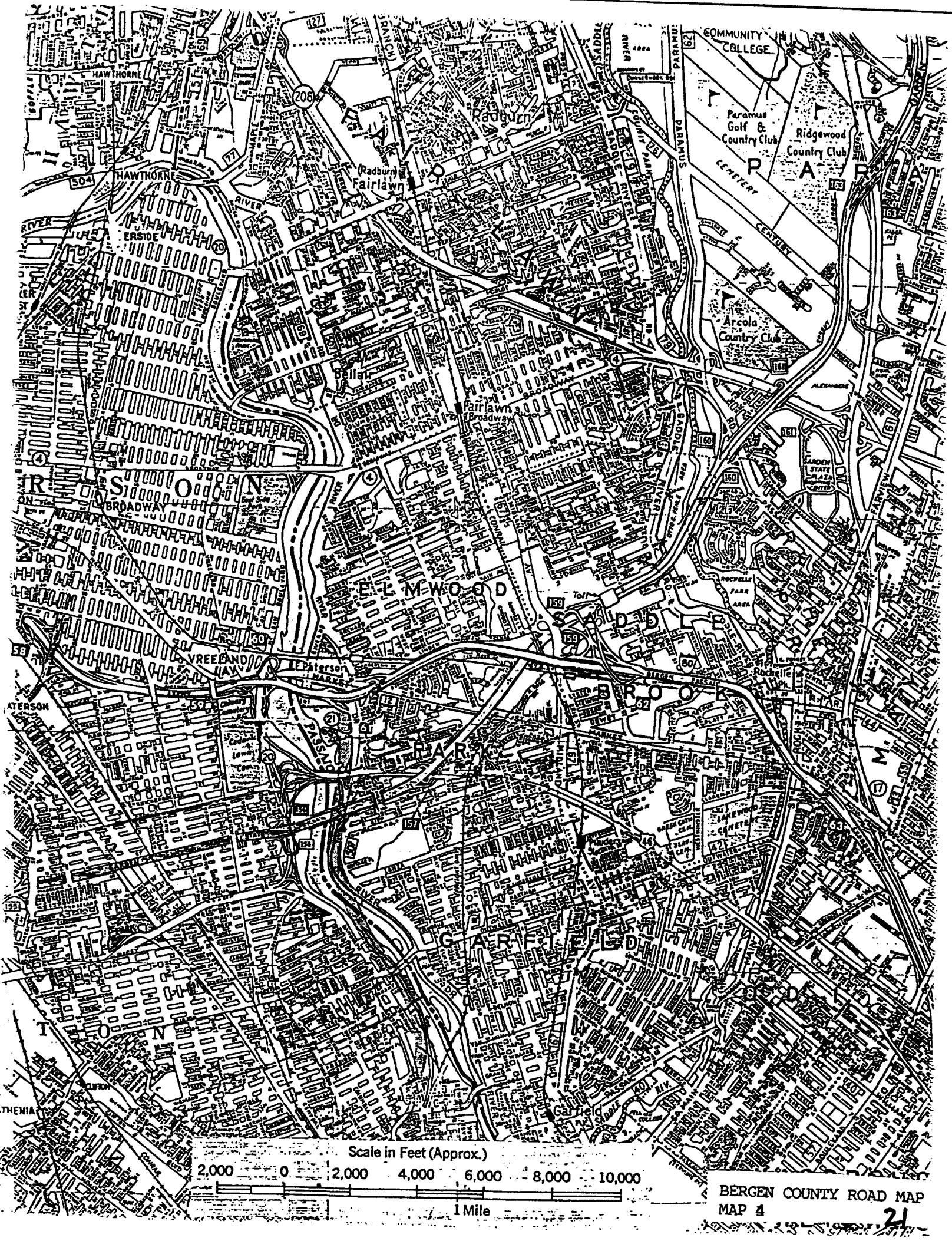
MAP 1



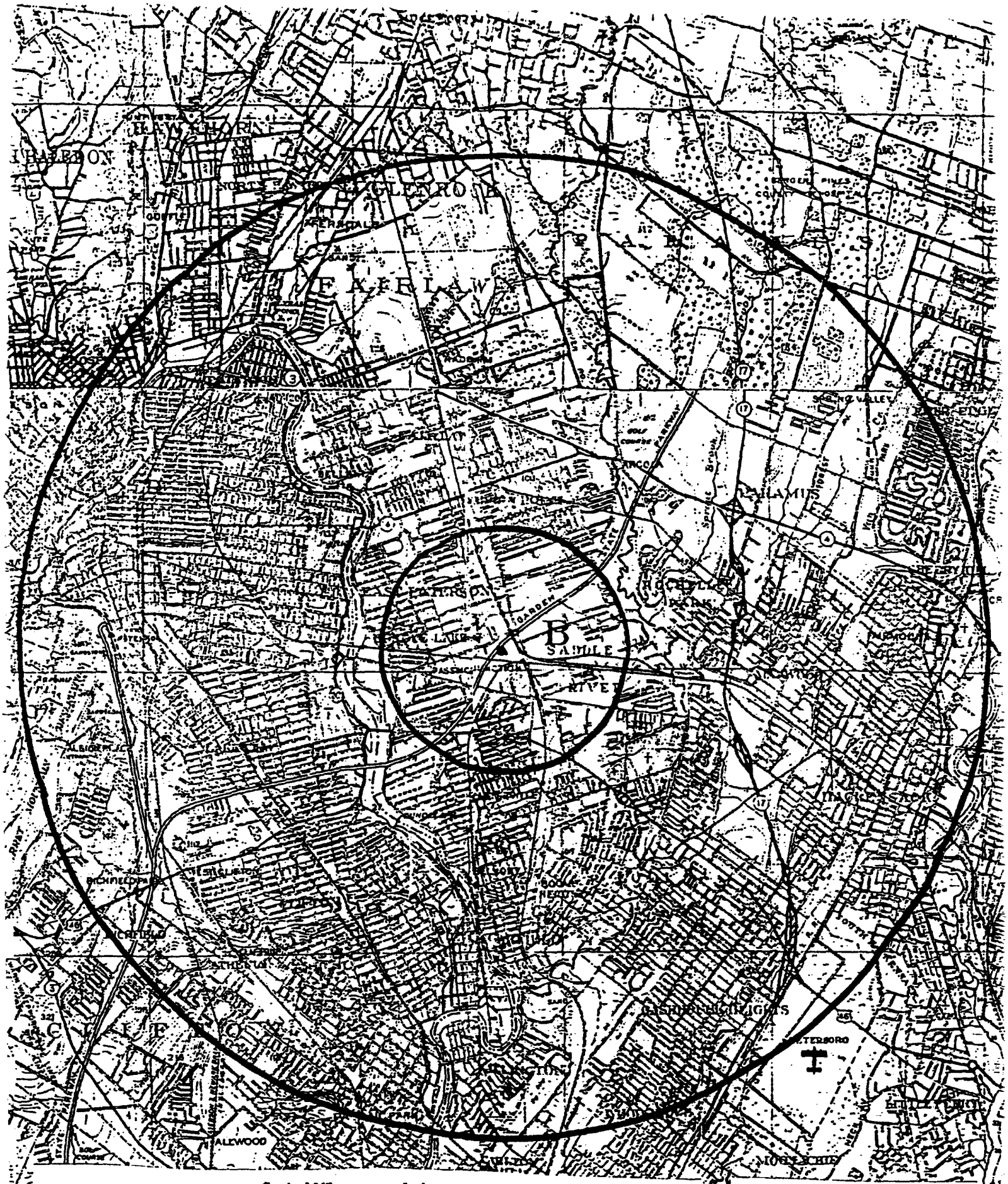
SITE MAP
MAP 2


PARKWAY
PRIVATE ACCESS ROAD
RAILROAD UNDERPASS
WESTERN
RAILROAD
BRANCH
PASSAIC
STEM
CLASS I
MAIN
EDWARD H. ROSS DRIVE
1
2.60± AC.
2
5.27 AC.
3
0.787 AC.
4
5.47 AC.
5
1.18± AC.
6
4.23± AC. TOTAL AREA
7
0.902 AC. TOTAL AREA
8
2.82 AC.
3
2.85 AC.
2
AC.
7
5.429 AC.
8
3.43 AC.
1405
1406
1412
1411
324
324
ERIE LACKAWANNA RAILROAD
BERGEN
BROOK
BERGEN
TOWNSHIP OF SADDLE
ONRAIL (FORMERLY
BOUNDARY
MAIN STEM
CLASS I
CLASS II
OVERPASS
MATCH
BLOCK
LIMIT
SHEET 15
SHEET 17
NEW JERSEY DEPARTMENT OF THE TREASURY
DIVISION OF TAXATION
LOCAL PROPERTY AND PUBLIC UTILITY BRANCH
APPROVED AS A TAX MAP PURSUANT TO THE PROVISIONS OF CHAPTER 175, LAWS OF 1911, ETC. FOR THE DIRECTOR, DIVISION OF TAXATION
SEP 1 0 1986
TAX MAP
BOROUGH OF ELMWOOD PARK
BERGEN COUNTY, NEW JERSEY
DAVID J. BOSWELL, P.L.S.
BOSWELL ENGINEERING
78-80 HT VERNON STREET
TAX MAP
MAP 3

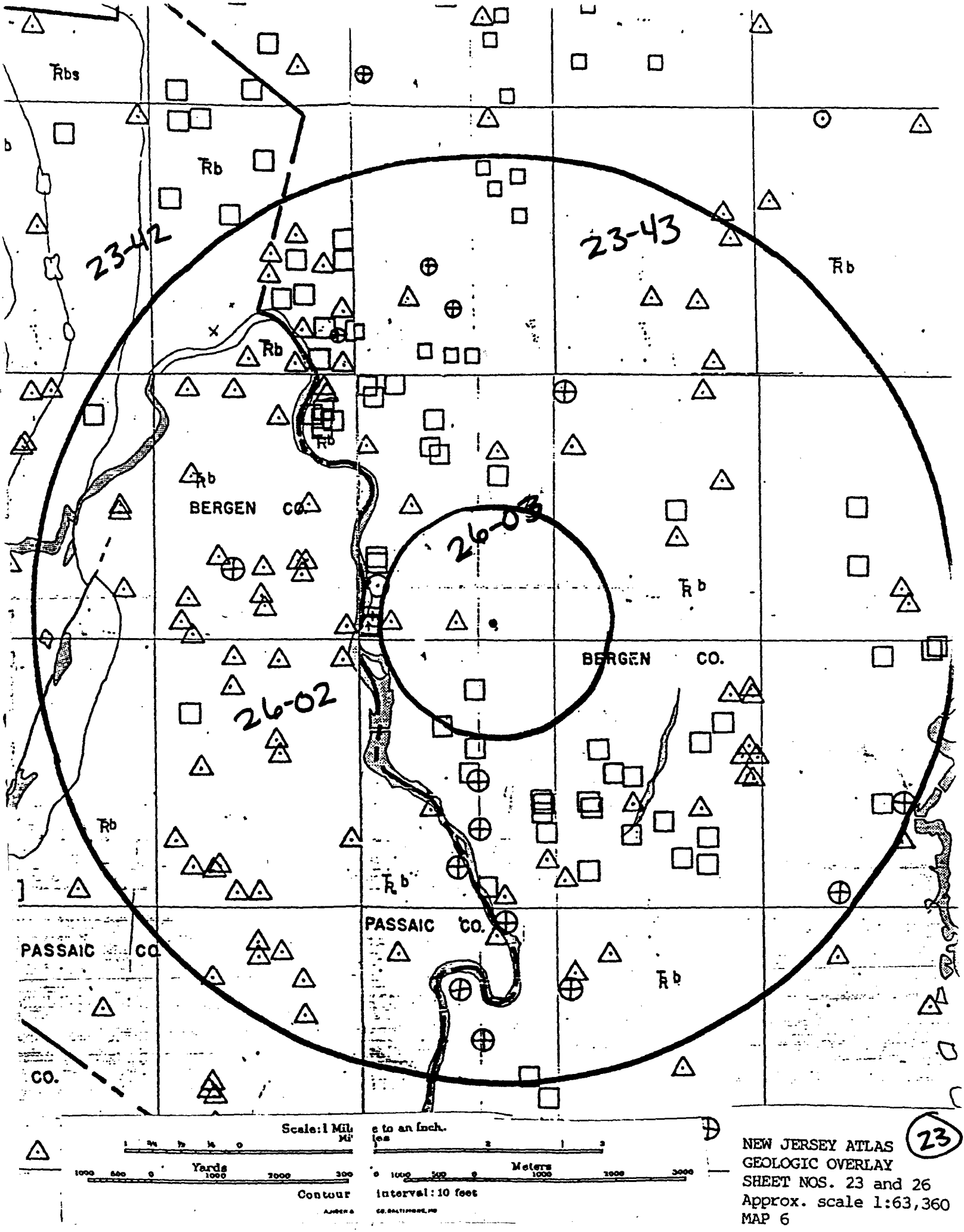
20



BERGEN COUNTY ROAD MAP
MAP 4



NEW JERSEY ATLAS
BASE MAP
SHEET NOS. 23 and 26
Approx. scale 1:63,360
MAP 5



NEW JERSEY ATLAS
GEOLOGIC OVERLAY
SHEET NOS. 23 and 26
Approx. scale 1:63,360
MAP 6

23

LEGEND FOR ATLAS SHEET 23

△ — INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE

□ — PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ — UNSUCCESSFULL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ — UNSUCCESSFULL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

[?] — NO TEST – NO DATA ON YIELD

— — FAULT (DASHED WHERE INFERRED)

— — CONTACT (DASHED WHERE INFERRED)

HIGHLANDS / EDMONT — PHYSIOGRAPHIC PROVINCE BOUNDARY

WATER SUPPLY TRANSMISSION LINE

Rb — TRIASSIC BRUNSWICK FORMATION

Rdb — TRIASSIC DIABASE

Rbs — TRIASSIC BASALT FLOWS

PRECAMBRIAN

gh — MOSTLY HORNBLENDE GRANITE AND GRANITE GNEISS

am — AMPHIBOLITE

pqo — PYROXENE GNEISS; MAINLY QUARTZ-OLIGOCLASE-CLINOPYROXENE GNEISS

hqa — PYROXENE GNEISS; MAINLY QUARTZ-ANDESINE GNEISS WITH BOTH ORTHO AND CLINOPYROXENE

qo — QUARTZ-OLIGOCLASE GNEISS

qob — QUARTZ-OLIGOCLASE-BIOTITE GNEISS

qs — SILLIMANITE GNEISS

sk — MARBLE AND SKARN

LEGEND FOR ATLAS SHEET 26 (GEOLOGY)

△ — INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE (INCLUDING PRIVATE WELLS)

□ — PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ — UNSUCCESSFUL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ — UNSUCCESSFUL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

[†] — NO TEST – NO DATA ON YIELD

——— FAULT (DASHED WHERE INFERRED)

——— CONTACT (DASHED WHERE INFERRED)

PHYSIOGRAPHIC PROVINCE BOUNDARY

WATER SUPPLY TRANSMISSION LINE

NOTE: WHERE THE PRECAMBRIAN FORMATION BOUNDARIES TERMINATE ABRUPTLY, IT IS THE GEOLOGIST'S OPINION THAT THE GEOLOGICAL COMPLEXITY OF THE AREA PREVENTS FURTHER INTERPRETATIONS.

Kmr — CRETACEOUS MAGOTHY AND RARITAN FORMATIONS (SAND AND CLAY)

Ꞧb — TRIASSIC BRUNSWICK FORMATION

Ꞧc — TRIASSIC CONGLOMERATE BEDS OF THE STOCKTON FORMATION

Ꞧl — TRIASSIC LOCKATONG FORMATION

Ꞧdb — TRIASSIC DIABASE

Ꞧbs — TRIASSIC BASALT FLOWS

Sd — SILURIAN DECKER LIMESTONE AND LONGWOOD SHALE FORMATIONS

Sgp — SILURIAN GREEN POND CONGLOMERATE

Omb — ORDOVICIAN MARTINSBURG SHALE

€Ok — CAMBRO ORDOVICIAN KITTATINNY LIMESTONE

€h — CAMBRIAN HARDYSTON SANDSTONE

PRECAMBRIAN:

gh - HORNBLENDE GRANITE WITH PYROXENE GRANITE

ga - ALASKITE

am - AMPHIBOLITE

px - PYROXENE GNEISS

gnq - QUARTZ PLAGIOCLASE GNEISS

gnb - BIOTITE GNEISS

sk - SKARN, GRAPHITE SCHIST

fnd — FORMATION NOT DETERMINED

LEGEND

TER SUPPLY

- AREA SERVED BY PRIVATE WATER SERVICE COMPANIES
- AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES
- AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES
- AREA NOT PRESENTLY SERVED BY WATER SERVICE
- PUBLIC SUPPLY WELLS
- WATER MAIN ACROSS HIGHWAY FOR FUTURE USE
- SURFACE WATER INTAKE
- —W— MAJOR WATER MAINS

FWAGE, LANDFILL

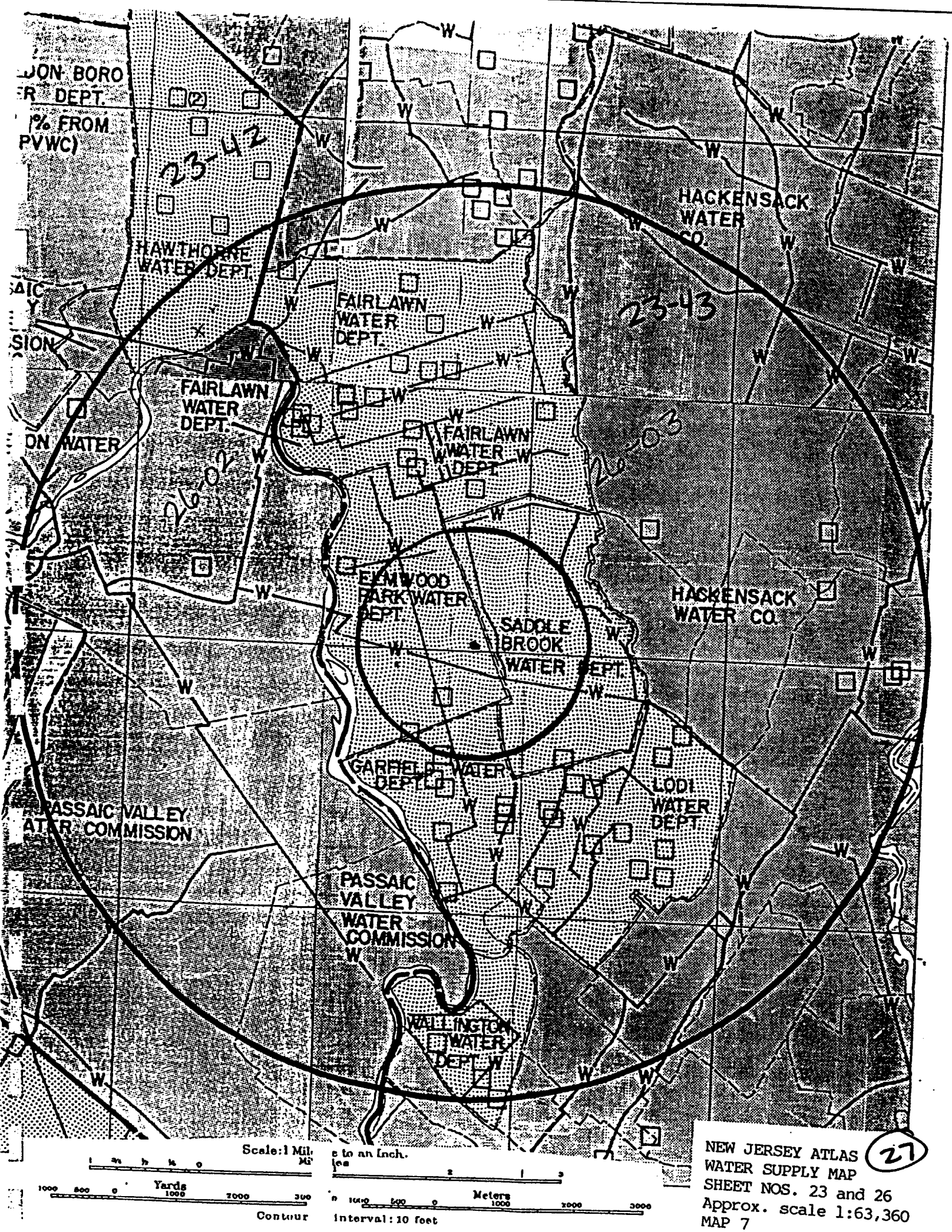
- AREA SERVED BY PUBLIC SEWAGE SERVICE
- AREA NOT PRESENTLY SERVED BY SEWAGE SERVICE
- SANITARY LANDFILLS
- SEWAGE TREATMENT PLANTS (CAPACITY <0.3mgd)
- SEWAGE TREATMENT PLANTS (CAPACITY ≥0.3mgd)
- —S— MAJOR SEWAGE TRANSMISSION LINES

RAINAGE BASIN

- DRAINAGE BASIN BOUNDARY
- RIVER BASIN BOUNDARY
- HUDSON DRAINAGE BASIN NAME
- STREAMS AND RIVERS
- FLOOD PRONE AREAS

PULATION

- COUNTY BOUNDARY
- MUNICIPAL BOUNDARY
- ( ) POPULATION DENSITY IN PERSONS PER SQUARE MILE
- [ ] AREA IN SQUARE MILES
- % PERCENT AREA OF MUNICIPALITY ON BLOCK
- MARKET ROADS
- BUILT UP AREAS
- STATE BOUNDARY



NEW JERSEY ATLAS (27)
WATER SUPPLY MAP
SHEET NOS. 23 and 26
Approx. scale 1:63,360
MAP 7

A. Paterson

B. Passaic-Lower Passaic, Ramapo, Saddle River

C. 1. Midland Park - Non-recording precipitation gauge

2.

Map No.	Location	Period of Record
40	Mollyann Brook at Haledon Upper Res., No.Haledon	7/23/45
41	Mollyann Brook at Haledon Lower Reservoir, No. Haledon	"
42	Mollyann Brook at Sicomac Rd. Dam,No.Haledon	"
43	Mollyann Brook at Squaw Lake Dam, No.Haledon	"
44	Mollyann Brook at Oldham Pond Dam,No.Haledon	"
45	Goffle Brook at Maple Lake, Wortendyke	"
49	Goffle Brook at Wortendyke Pond, Wortendyke	"
50	Goffle Brook at Kenihers Dam, Midland Park	"
51	Goffle Brook at Oriental Rug Dam, Midland Park	"
52	Goffle Brook at Arnold Dam, Hawthorne	"

Water Quality Standards: (explained in Atlas Sheet description) FW2 except where FW3

D. Brunswick Formation (Trb), Basalt Flows (Trbs)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Watchung Ridges
Elevations (ft.above sea level): ridges 900, valleys 50
Relief (ft.): 850

2. a. Normal Year: 48"
Dry Year: 41"
Wet Year: 59"

b. January: 30°F
July: 74°F

c. 242 days. Last killing frost: 4/15; first killing frost: 10/25

3. Land Use Map available

F. Haledon Water Department - Municipal Watershed

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
23-42-119	Franklin Lakes Bd.of Ed.	1962	84	84	250	Qp
23-42-128	Urban Farms	1962	87	87	200	"
23-42-162	Franklin Lakes Dairy			400	100	Trb
23-42-165	"			307	100	"
23-42-216	Ramapo Regional H.S.	1956	68	303	150	"
23-42-221	Ridgewood Village	1956		300	159	"
23-42-226	"			303	159	"
23-42-233	"	1965		300	503	"
23-42-235	"	1956		300	258	"
23-42-255	"	1959		302	450	"
23-42-272	Haledon Boro			700	25	"
23-42-281	Holland Home Assoc.	1959	20	333	100	"
23-42-318	Pines Lakes			203	125	"
23-42-325	Ridgewood Village	1958	24	303	251	"
23-42-326	"			715	225	"
23-42-329	Montabert, F., Co.	1954	10	300	125	"
23-42-341	Summer, A., Co.			206	70	Qp,Trb
23-42-342	Wayne Twp.			200	175	Trb,Trbs
23-42-352	Ridgewood Village(12 wells)			125av.	Good	Trb
23-42-353	King, H.			185	100	"
23-42-357	Ridgewood Village	1957		350	450	"
23-42-365	Grand Union			178	190	"
23-42-378	Hawthorne Boro			350	215	"
23-42-378	"	1962		350	215	"
23-42-383	Ridgewood Village	1956		300	245	"
23-42-388	Hawthorne Boro	1963		350	268	"
23-42-427	N.J. Country Club	1959	28	45	150	Qp
23-42-443	"	1958	28	45	150	"
23-42-533	Wah-Chang	1960	40	302	510	Trb
23-42-554	Ideal Farms	1960	96	285	160	"
23-42-613	Hawthorne Boro			113-250 (3 wells)	130	"
23-42-626	"			300	225	"
23-42-642	"	1961		300	500	"
23-42-651	"	1960	40	300	225	"
23-42-656	Pacquin, Inc.			350	350	"
23-42-659	"			541	250	"
23-42-664	Textile Dyeing Co.of Am.			400	459	"
23-42-666	Ridgewood Village	1956		300	142	"
23-42-667	Fairlawn Boro			200	200	"
23-42-668	Einson & Freeman	1956	19	325	168	"
23-42-683	Victory Diner			250	80	"
23-42-688	Morris Paperboard Co.	1958	22	400	249	"
23-42-694	Fairlawn Finishing Co.	1951	32	503	450	"
23-42-695	Henderson's Pond			451	275	"
23-42-696	National Biscuit Co.	1962	58	393	138	"
23-42-696	Fairbanks Morse Co.	1955	29	121	92	"
23-42-697	Lomor Corp.			400	225	"
23-42-699	1st Savings & Loan Assoc.			150	110	"

J. Geodetic Control Survey monuments described
Index Map 15; adjacent Index Maps 14,9,10

BLOCK #23-43

A. Hackensack, Paterson

B. Hackensack-Pascack Creek, Hackensack; Passaic-Saddle River, Lower Passaic

C. 2.

Map No.	Location	Period of Record
55	Saddle River at Ridgewood	1955-
56	Hohokus Lake at Cooks Lake Dam	7/23/45
59	Hohokus Brook at Hohokus	1954-
60	Hohokus Brook below Spring Ave.,Ridgewood	7/23/45
410	Musquapsink Brook near Westwood	1965-
422	Saddle River at Paramus	1965

3.

265	Saddle River at Grove St., Ridgewood	1967-
277	Hohokus Brook at Ridgewood	1967-
268	Sprout Brook at Midland Ave., River Edge	1967-

Water Quality Standards: (explained in Atlas Sheet description)
FW2, TW1 except where classified FW3

D. Brunswick Formation (Trb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain
Elevations (ft.above sea level): ridges 400, valleys 50
Relief (ft.): 350

2. a. Normal Year: 46"
Dry Year: 39"
Wet Year: 53"

b. January: 31°F
July: 74°F

c. 245 days. Last killing frost: 4/15; first killing frost: 10/25

3. Land Use Map available

F. Bergen County:
Saddle River County Park
Municipal Watershed:
Newton

H. Seven Chimneys, Westwood
Terhune/Gardner/Lindenmeyer House, Paramus

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting Depth of of Casing	Total Depth	g/m Yield	Formation
23-43-114	Ridgewood Village			402	350	Trb
23-43-123	Hohokus Boro	1963	52	300	411	"
23-43-127/8	Ridgewood Village (8 wells)			150(av)	95(av)	"
23-43-131	Hohokus Boro			300	200	"
23-43-133	"	1955	39	301	288	"
△23-43-158	Grand Union			178	190	"
△23-43-159	Food Fair Stores	1955	71	310	250	"
□23-43-174	Ridgewood Village	1955	35/56	300	43	"
□23-43-177	"			300	198	"
□23-43-191	"	1964	52/54	300	1230	"
□23-43-198	"			298	200	"
23-43-212	Hohokus Boro			412	105	"
23-43-215	"			314	245	"
23-43-224	Sher, M.	1963	30	205	100	"
23-43-245	Ridgewood Village	1955	42/64	300	200	"
23-43-248	"			201	500	"
23-43-252	"	1964	18/42	320	390	"
□23-43-275	"			210	250	"
23-43-285	Peterman, J.	1961	30	165	100	"
23-43-332	Westwood Fuel Co.	1960	56	236	75	"
23-43-371	McKenna			605	210	"
△23-43-431	Faber, J.	1964	52	85	75	"
□23-43-434	Ridgewood Village			300	162	"
□23-43-436	"	1955	44/64	300	165	"
□23-43-437	"	1957	36/40	303	340	"
□23-43-438	"	1965	51/73	300	254	"
□23-43-457	City Housing Corp.			300	30	"
□23-43-462	Ridgewood Village			300	151	"
□23-43-463	"	1965	65/86	300	151	"
△23-43-473	Einson & Freeman Co.			325	168	"
□23-43-482	City Housing Corp.			250	30	"
□23-43-487	"			378	137	"
□23-43-488	Fairlawn Boro			350	385	"
□23-43-489	"			250	125	"
23-43-511	Ridgewood, Village of	1973	78	300	159	"
23-43-562	Great Eastern Mills, Inc.	1956	21	200	250	"
23-43-565	"	1956	34	203	250	"
△23-43-582	Ridgewood Country Club	1964	29	500	250	"
23-43-591	N.Y. Twist Drill Co.			200	125	"
23-43-598	N.J. 17 Corp.			245	80	"
23-43-632	Hackensack Golf Club	1958	81	532	172	"
23-43-641	Paramus Bd.of Ch.Freeholders	1957	54	300	150	"

J. Geodetic Control Survey monuments described
Index Map 15; adjacent Index Maps 9,10,16

A. Orange, Paterson

B. Passaic-Lower Passaic

C. 1. Little Falls - Recording and non-recording temperature and precipitation gauges
Paterson - Non-recording temperature and precipitation gauges

2.

Map No.	Location	Period of Record
35	Passaic River at Little Falls	1897-
36	Slippery Rock Brook at Barbours Pond, West Paterson	7/23/45
27	Slippery Rock Brook at Highland Lake, West Paterson	7/23/45
39	Peckman Brook at Bradford Ave.,Cedar Grove	7/23/45
43	Mollyann Brook at Squaw Lake Dam, No.Haledon	7/23/45
45	Mollyann Brook below Redwood Ave.,Paterson	7/23/45
46	Passaic River at Paterson	1898-1955

3.

35	Passaic River at Little Falls	1962-
247	Passaic River at Totowa	1964-
254	Peckman River at Cedar Grove	1964
255	Peckman River at West Paterson	1964-

Water Quality Standards: (explained in Atlas Sheet Description)
FW2 except where classified FW3

D. Brunswick Formation (Trb), Basalt Flows (Trbs)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain, Watchung Ridges
Elevations (ft.above sea level): ridges 600, valleys 50
Relief (ft.): 550

2. a. Normal Year: 47"
Dry Year: 38"
Wet Year: 59"

b. January: 31°F
July: 74°F

c. 241 days. Last killing frost: 4/25; first killing frost: 10/20

F. Passaic County:
Preakness Valley Park
Garrett Mountain Reservation
Passaic Valley:
Municipal Watershed
Cedar Grove:
Municipal Watershed

H. Westside Park/Van Houten House, Paterson
Great Falls of Paterson and Society of Useful Manufactors, Historic District, Paterson

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
□26-02-142	Twp. of Wayne			?	No test	Q
26-02-174	Marcal Paper Products			?	"	"
26-02-177	"			?	"	"
△26-02-221	Grand Union Co.	1955	30	41	90	"
△26-02-222	Bluebird Dyeing Corp.			65	550	"
△26-02-227	Columbia Piece Die Works			235	100	Trdb
△26-02-227	"			100	140	"
□26-02-234	Fair Lawn Dept. of Pub.Wks.			500	85	Trb
△26-02-265	35 Church St. Corp.	1953	32	200	75	"
△26-02-265	Garden Theater	1955	35/8	229	200	"
△26-02-273	Hudson Piece Dye Works			450	75	Trbs-Trb
△26-02-295	Passaic Rolling Mill			2100	100	Trb
△26-02-312	Barbizon Corp.			300	385	"
△26-02-321	Boque Electric Co.			345	215	"
△26-02-326	Spotless Cleaners	1965	30	400	135	"
△26-02-332	Lyons Piece Dye Works			584	85	"
△26-02-332	"			600	250	"
□26-02-334	Fair Lawn Dept.of Pub.Wks.	1964	40	500	85	"
□26-02-335	Boro of Fair Lawn			402	475	"
□26-02-335	"			413	500	"
□26-02-335	Fair Lawn Dept.of Pub.Wks.	1955	47	400	450	"
□26-02-335	"	1954	53	500	75	"
△26-02-342	Our Lady of Victories	1954	25	300	112	"
△26-02-364	Temple Emanuel	1954	17	150	150	"
△26-02-373	Madison Ave.Baptist Church	1964	38	250	276	"
△26-02-375	River Pulp Co.			400	350	"
△26-02-378	Wright's Diner			220	70	"
△26-02-378	Heller Candy Co., Inc.	1962	25	315	157	"
□26-02-381	Paterson Board of Education	1965	63	312	30	"
△26-02-382	First Natl.Bank & Trust	1953	12	200	125	"
△26-02-385	Grand Union Co.			199	85	"
△26-02-385	Artson Realty Co.			200	100	"
△26-02-391	Okonite Co.			?	375	"
△26-02-391	"			?	375	"
△26-02-391	"			?	375	"
△26-02-399	Food Fair Stores, Inc.	1955	21.5	231	150	"
26-02-416	Colorite Color Plastics	1965	45/50	405	2	Trbs
26-02-424	Container Corp.of America	1958	32	600	65	"
△26-02-426	Instrument Specialty Co.	1956	33	150	75	Trb-Trbs
26-02-447	Little Falls Laundry			1012	450	Trbs
26-02-579	Bongiorne, Dr.			250	105	Trb
26-02-589	Bolero	1954	50	350	200	"
26-02-618	Pub.Svc.Elec.& Gas			400	164	"
△26-02-621	Manhattan Casting Co.	1959	20	220	150	"
△26-02-623	Boque Electric Co.			447	75	"
△26-02-624	Garafano & Son, Inc.	1965	24	140	201	"
△26-02-633	Independence Plating Co.	1954	21.5	402	230	"
△26-02-645	F.E.R. Realty Co.,Inc.	1955	32	307	300	"
△26-02-653	Natl. Silk & Dyeing Co.			500	125	"
△26-02-653	"			600	125	"

				D	V	
26-02-671	Shulton, Inc.	1955	15/28	300	435	Trb
26-02-675	"	1964	20	400	198	"
26-02-676	"	1964	21	300	322	"
26-02-676	Athenia Steel Co.			389	330	"
26-02-687	Eureka Printing Co.	1959	36/40'10"	60	282	"
26-02-688	Federal Sweets & Biscuit Co.			400	280	"
26-02-693	Cosley & Co.	1954	45	250	105	"
26-02-763	Bonds Ice Cream, Inc.			157	150	"
26-02-783	Bellvue Theater			250	145	"
26-02-861	Food Fair Stores			207	150	"
26-02-887	Essex Co.Park Commission			224	164	"
26-02-894	Brookdale Beverage	1957	46	430	85	"
26-02-919	Glopro Realty Co.,Inc.	1958	27	333	92	"
26-02-922	Texstyle Corp.			605	250	"
26-02-925	Standard Packaging Corp.	1955	57	400	190	"
26-02-926	Oneida Paper Prods. Co.			200	100	"
26-02-937	Fritzsche Bros.			600	218	"
26-02-961	Speedway Car Wash Co.	1960	20	500	80	"
26-02-973	Grand Union Co.			102	80	Q-Trb
26-02-973	Brookliff Realty Co.	1962	24	301	190	Trb
26-02-973	Dumont Laboratories	1958	22	305	335	"
26-02-976	Stier, Albert A., Inc.			350	400	Q-Trb

J. Geodetic Control Survey monuments described
Index Maps 15,21; adjacent Index Maps 14,20

BLOCK #26-03 8/76

A. Hackensack, Orange, Paterson, Weehawken

B. Hackensack-Hackensack; Passaic-Saddle River, Lower Passaic

C. 2.

Map No.	Location	Period of Record
53	Passaic River at Dundee Dam, Clifton	7/23/45
61	Saddle River at Lodi	1923-
62	Weasel Brook at Clifton	1937-1961
419	Fleischer Brook, East Paterson (Market St.)	1967-
423	Sprout Brook at Rochelle Park	1965-
3. 242	Overpeck Creek at Ridgefield	1964-
248	Passaic River at Garfield	1964
264	Saddle River at Garfield	1967-

Water Quality Standards: (explained in Atlas Sheet description)
FW3, TW1 except where classified TW2 or TW3

D. Brunswick Formation

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain
Elevations (ft.above sea level): ridges 150, valleys 0
Relief (ft.): 150

2. a. Normal Year: 45"
Dry Year: 36"
Wet Year: 50"

b. January: 31°F
July: 74°F

c. 245 days. Last killing frost: 4/20; first killing frost: 10/20

F. Bergen County:
Saddle River County Park

H. Von Steuben House, River Edge

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-03-111	Boro of Fair Lawn			408	380	Trb
26-03-111	"			458	280	"
26-03-112	"			500	143	"
26-03-117	Fair Lawn Dairy Co.,Inc.	1955	62	205	125	"
26-03-124	Fair Lawn Water Dept.	1954	47	200	173	"
26-03-127	Fair Lawn Dept.of Pub.Wks.	1955	48/53	400	165	"
26-03-127	Boro of Fair Lawn			338	245	"
26-03-137	Metro Glass			200	120	"
26-03-146	Ellwood Stores Inc.	1952	22	692	100	"
26-03-161	Boro of Wallington			300	304	"
26-03-171	Garfield Boro Water Dept.			330	95	"
26-03-174	Marcal Paper Mills, Inc.	1962	25	35	35	Q
26-03-177	"	1962	23	27	No test	"
26-02-177	"	1962	8	20	"	"
26-03-177	"	1962	22	30	"	"
26-03-178	Sausville, J. & Son			300	100	Trb
26-03-188	Rel Plastic Corp.	1952	79	150	75	"
26-03-211	Boro of Fair Lawn			500	65	"
26-03-217	Farmland Dairies, Inc.	1974	47	635	235	"
26-03-231	All Purpose Roll Leaf	1962	71	350	100	"
26-03-256	Hackensack Water Co.	1965	77'10"	473	250	"
26-03-259	Bijur Lubricating Corp.			175	200	"
26-03-262	Alexander's Dept. Store	1961	25	35	290	Q
26-03-355	Hackensack Water Co.	1959		75	No test	Trb
26-03-382	Lodi Dept.of Public Works			450	175	"
26-03-394	Spartan Typographers Inc.	1956	135	145	75	Q
26-03-394	Hackensack Cable Co.	1958	106	120	171	Trb
26-03-426	East Paterson, Boro of	1954	80	200	180	"
26-03-427	Boro of Wallington			400	350	"
26-03-453	City of Garfield	1966	57/77	475	77	"
26-03-456	"	1967	33/56	400	328	"
26-03-456	"	1966	20/43	710	30	"
26-03-457	Whippany Paper Board	1956	54	250	312	"
26-03-469	City of Garfield			273	95	"
26-03-469	"			320	130	"
26-03-469	"			165	400	"
26-03-483	"	1966	21/40	400	25	"
26-03-485	Botany Worsted Mills			81	7	"
26-03-489	City of Garfield	1967	61.5	276	No test	"
26-03-493	"			326	89	"
26-03-496	Laurel Co.			500	100	"
26-03-497	Heyden Chemical Works			375	90	"
26-03-535	Aquarium, Inc.	1963	22	300	172	"
26-03-536	Maywood Chemical Co.			220	400	"
26-03-536	Citro Chemical Co.			220	400	"
26-03-538	Lodi, Boro of			403	600	"
26-03-542	City of Garfield	1968	15/35	405	405	"
26-03-546	Lodi, Boro of			300	170	"
26-03-548	"			?	135	"
26-03-548	"			200	125	"
26-03-554	Lodi Dept.of Public Works	1965	20/40	510	100	"

26-03-557	Washine Chemical Co.	1966	29'4"/ 46'10-1/2"	400	100	Trb
26-03-561	Boro of Lodi			?	295	"
26-03-563	Lodi Shopping Center	1960	22	300	290	"
26-03-563	"	1956	20'8"	301	350	"
26-03-563	Muscarelle, J.L., Inc.	1966	32	400	159	"
26-03-566	Interchemical Corp.			435	187	"
26-03-566	Spiegal Mfg. Corp.	1969	34/43	300	237	"
26-03-567	Master Etching Corp.	1965	29	400	105	"
26-03-575	Boro of Lodi	1954	31'5"/ 53'1"	459	157	"
26-03-577	Yoo-Hoo Beverage Co.	1959	22	303	95	"
26-03-581	Boro of Lodi			?	145	"
26-03-582	Lodi Dept.of Public Works	1965	36/56	450	175	"
26-03-586	Boro of Lodi			?	109	"
26-03-591	"	1966	28/48	470	285	"
26-03-594	"			350	85	"
26-03-623	Hackensack Water Co.			189	215	Q
26-03-632	"	1954	130/ 148'8"	168	1700	"
26-03-632	"	1955	168	190	1420	"
26-03-659	Bowler City	1958	120	400	108	Trb
26-03-667	Food Fair Stores	1954	270	525	55	"
26-03-687	Spinnerin Yarn	1965	110	400	55	"
26-03-691	Seilheimer Beverage Co.	1958	115	415	76	"
26-03-715	Farmland Dairy Inc.	1968	12/50	400	25	"
26-03-728	Paterson Parchment Paper Co.			378	53	"
26-03-731	Prescott, J.L. & Co.	1962	90	500	25	"
26-03-731	Tendebrands Frozen Foods	1950	76	230	100	"
26-03-756	Boro of Wallington	1964	118.5	300	30	"
26-03-768	"	1965	40	400	217	"
26-03-793	"			300	330	"
26-03-816	Wright Aeronautical Eqpt.	1957		340	515	"
26-03-817	Tube Reducing Corp.	1954	20	397	90	"
26-03-817	"	1954	31	392	20	"
26-03-859	Terminal Construction Co.	1952	20	145	120	"
26-03-888	Hackensack Water Co.	1955	86	86	300	Q
26-03-888	"	1955		263	No test	Q
26-03-888	Lancaster Chemical Co.	1963	311/287	400	55	Trb
26-03-894	Hackensack Water Co.	1955		243	60	Q
26-03-899	World Plastic Extruders,Inc.	1966	53	200	100	Trb
26-03-924	DeTroy Press, Inc.	1956	67	150	95	"
26-03-962	Stage Coach Inn			565	110	"

J. Geodetic Control Survey monuments described
Index Maps 15,21; adjacent Index Map 16

SUBJECT TO REVISION

AETNA CHEMICAL

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 405410
LONGITUDE 740628

DRAFT

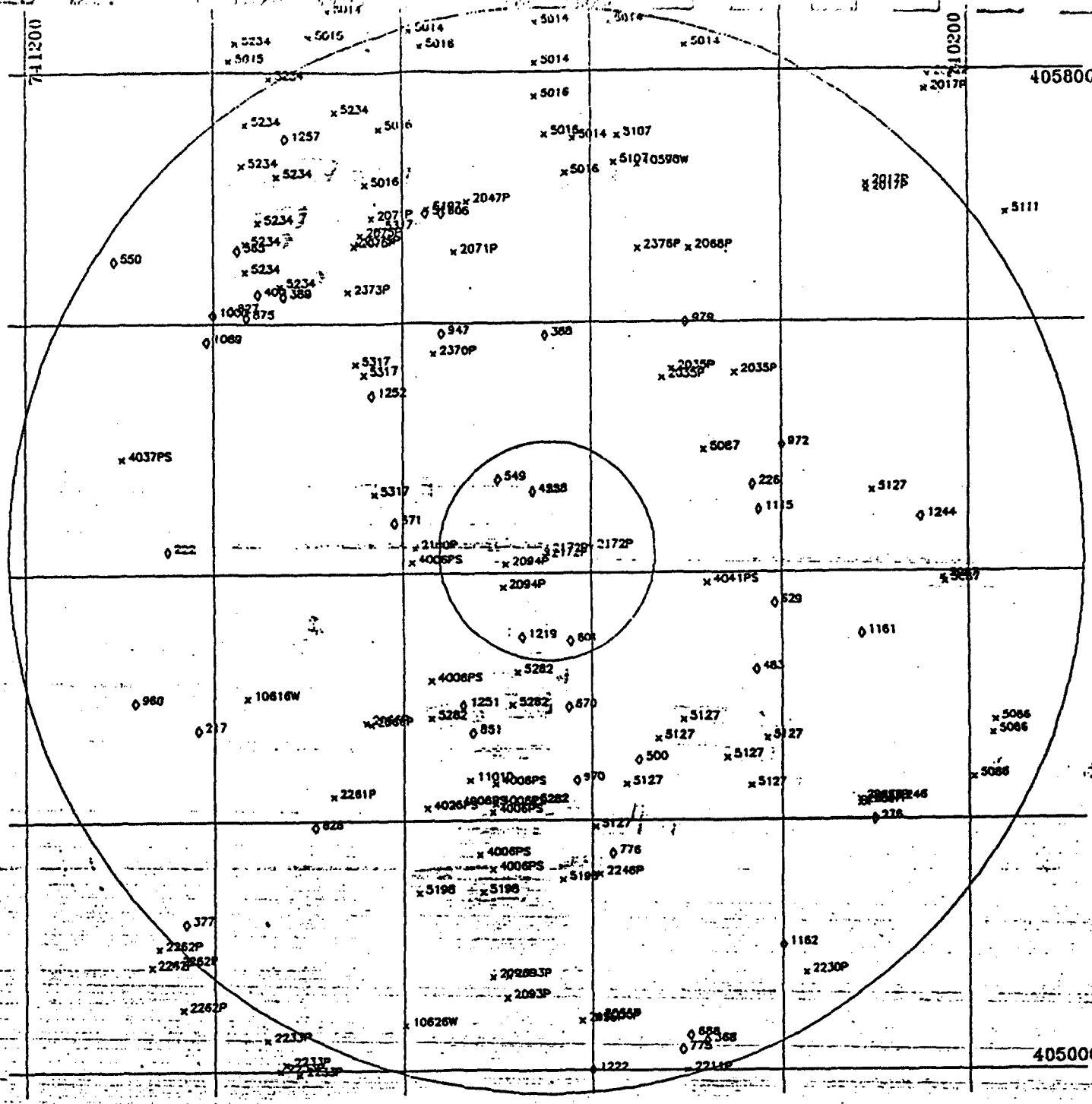
SCALE: 1:63,360
~~(1 Inch = 1 Mile)~~
1 mile

× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEP
DIVISION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625

DATE: 02/06/90



SUBJECT TO REVISION

MAP 2

Page 1 of PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 405410 LAT. 740629 LON. (IN ORDER BY PERMIT NUMBER) - 02/08/90

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GED1	GED2	CAPACITY
10572W	BERGEN CO. COMMUNITY COLLEGE	4300101		405715	740530	F	3.6	03	46	200	GTRB		180
10590W	BERGEN CO. DIV. OF PARKS	4300100		405715	740530	F	3.6	03	46	210	GTRB		275
10616W	INTERNATIONAL VEILING CORP.	2600902		405300	740929	T	3.1	31	02	307			120
10626W	FALSTROM COMPANY, INC.	2601494	1	405022	740759	T	4.6	31	07	300	GTRB		145
1101D	FOSTER WHEELER PASSAIC, INC.			405220	740718		2.2	31	07	46	GD		175
2017P	HACKENSACK GOLF CLUB	2302297	1	405757	740225	S	5.6	03	44	532	GTRB		150
	HACKENSACK GOLF CLUB	2305656	2	405702	740304	S	4.4	03	44	320	GTRB		60
	HACKENSACK GOLF CLUB	LOWER LAKE	1	405705	740304	F	4.5	03	44		GTRB		300
	HACKENSACK GOLF CLUB	UPPER LAKE	2	405750	740227	F	5.5	03	44		GTRB		300
2035P	ARCOLA COUNTRY CLUB	4600126	3	405533	740615	S	1.9	03	46	200	GTRB		160
	ARCOLA COUNTRY CLUB	2603872	4	405537	740609	S	2.0	03	46	208	GTRB		125
	ARCOLA COUNTRY CLUB	POND	1	405535	740430	U	2.4	03	46	5	GTRB		200
	ARCOLA COUNTRY CLUB	POND	2	405535	740430	U	2.4	03	46	15	GTRB		200
2047P	NABISCO BRANDS, INC.	2303369	2	405658	740719	S	3.3	03	17	393	GTRB		350
2055P	GANES CHEMICAL, INC.	4600080	2	405026	740557	F	4.3	03	05	490	GTRB		200
	GANES CHEMICAL, INC.	2600005	4	405024	740607	F	4.3	03	05	526	GTRB		80
	GANES CHEMICAL, INC.	2604277	5	405025	740557	F	4.3	03	05	430	GTRB		30
2057P	SPINNERIN YARN CO., INC.	4600177	0	405208	740309	F	3.7	03	59	404	GTRB		65
	SPINNERIN YARN CO., INC.	4600083	2	405210	740305	F	3.7	03	59	435	GTRB		0
	SPINNERIN YARN CO., INC.	2603018	3	405210	740309	F	3.7	03	59	400	GTRB		50
	SPINNERIN YARN CO., INC.	4600176	4	405208	740305	F	3.8	03	59	400	GTRB		140
	SPINNERIN YARN CO., INC.	2611599	5 PROPOSED	405210	740305	F	3.7	03	59		GTRB		
2066P	MILES LABORATORIES	2603833	2	405248	740824	M	2.3	31	02	300	GTRB		200
	MILES LABORATORIES	2604613	3	405247	740821	M	2.3	31	02	408	GTRB		200
2068P	RIDGEWOOD COUNTRY CLUB	4300032	1	405635	740458	U	3.1	03	46	306	GTRB		120
	RIDGEWOOD COUNTRY CLUB	4300033	2	405635	740458	U	3.1	03	46	275	GTRB		275
	RIDGEWOOD COUNTRY CLUB	2303832	3	405635	740458	S	3.1	03	46	500	GTRB		250
	RIDGEWOOD COUNTRY CLUB	POND	4	405635	740458	U	3.1	03	46	8	GTRB		500
2071P	FOSKANZER TULP COMPANY	2301946	1	405634	740727	S	2.9	03	17	390	GTRB		80
	FOSKANZER TULP COMPANY	2302038	2	405650	740620	F	3.5	03	17	325	GTRB		90
	FOSKANZER TULP COMPANY	2302081	3	405650	740620	F	3.5	03	17	302	GTRB		90
2075P	MAC NAUGHTON EINSON GRAPHICS	4300001	14	405637	740831	S	3.3	03	17	400	GTRB		250
	MAC NAUGHTON EINSON GRAPHICS	4300002	15	405638	740828	S	3.3	03	17	400	GTRB		275
	MAC NAUGHTON EINSON GRAPHICS	4300003	16	405642	740827	S	3.4	03	17	400	GTRB		330
2093P	ORVAL KENT FOOD COMPANY, INC.	2604317	1	405045	740704	F	4.0	03	12	580	GTRB		150
	ORVAL KENT FOOD COMPANY, INC.	2604341	2	405045	740654	S	3.9	03	12	300	GTRB		150
	ORVAL KENT FOOD COMPANY, INC.	2604382	3	405035	740655	T	4.1	03	12	470	GTRB		430
2094P	D.A.K. MANUFACTURING CORP.	2600466	1	405404	740635	F	0.4	03	11		GTRB		
	D.A.K. MANUFACTURING CORP.	4600210	2	405404	740635	U	0.4	03	11		GTRB		
	D.A.K. MANUFACTURING CORP.	4600211	3	405404	740635	U	0.4	03	11		GTRB		
	D.A.K. MANUFACTURING CORP.	2605037	4	405403	740657	F	0.5	03	11	250	GTRB		60
2100P	MARCAL PAPER MILLS, INC.	4600008	1	405412	740752	F	1.2	03	11	308	GTRB		150
	MARCAL PAPER MILLS, INC.	4600009	2	405412	740752	F	1.2	03	11	330	GTRB		280
	MARCAL PAPER MILLS, INC.	4600010	3	405412	740752	F	1.2	03	11	325	GTRB		250
	MARCAL PAPER MILLS, INC.	4600011	4	405412	740752	F	1.2	03	11	282	GTRB		80
	MARCAL PAPER MILLS, INC.	4600012	5	405412	740752	F	1.2	03	11		GTRB		125
	MARCAL PAPER MILLS, INC.	4600013	6	405412	740752	F	1.2	03	11		GTRB		300
2172P	PARK 80-KIDDIE ASSOCIATES	2604234	1	405408	740630	S	0.0	03	57	400	GTRB		300
	PARK 80-KIDDIE ASSOCIATES	2604235	2	405410	740629	S	0.0	03	57	400	GTRB		300
	PARK 80-KIDDIE ASSOCIATES	2605301	3	405410	740629	S	0.0	03	57	300	GTRB		0
	PARK 80-KIDDIE ASSOCIATES	2604104	4	405412	740600	S	0.4	03	57	300	GTRB		
2211P	HENKEL PROCESS CHEMICALS, INC.	4600125	1	405000	740500		5.0	03	05	170	GUSD		600
2220P	HOFFMAN LAROCHE INC.	2406268	1	405047	740345		4.6	41	03	140	GOOK		700
2233P	HOFFMANN-LAROCHE INC.	4600155	20	405000	740919	F	5.4	13	16	402	GTRB		100
	HOFFMANN-LAROCHE INC.	4600156	32	405015	740927	F	5.2	31	02	650	GTRB		260

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LL/CC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
	HOFFMANN-LAROCHE INC.	4600157	33	405003	740915	F	5.3	31	02		GTRB		165
	HOFFMANN-LAROCHE INC.	4600158	37	404958	740907	F	5.3	31	02	720	GTRB		300
2246P	FARMLAND DAIRIES INC.	2604169	1	405134	740555	U	3.0	03	65	600	GTRB		200
	FARMLAND DAIRIES INC.	2304250	2	405134	740555	U	3.0	03	65	500	GTRB		185
2261P	FRITZCHE DODGE & OLCOTT	2602812	2	405212	740845	U	3.0	31	02	600	GTRB		218
2262P	UPPER MONTCLAIR COUNTRY CLUB	2601199	1	405052	741025		5.1	31	02	490	GTRB		90
	UPPER MONTCLAIR COUNTRY CLUB	2604390	2	405059	741035		5.1	13	02	335	GTRB		132
	UPPER MONTCLAIR COUNTRY CLUB	2604825	3	405030	741020	T	5.4	31	02	300	GTRB		60
	UPPER MONTCLAIR COUNTRY CLUB	POND	SW	405050	741040	T	5.3	13	02	12	GOSD		1100
2370P	FISHER SCIENTIFIC CO. CHEM DIV	2605038	FW2	405545	740740		2.1	03	17	335	GTRB		60
2373P	CHINAM, INC.	4300098	1	405615	740835	T	3.0	31	08	800	GTRB		70
	CHINAM, INC.	4300099	2	405615	740835	T	3.0	31	08	800	GTRB		203
	CHINAM, INC.	2300369	3	405615	740835	T	3.0	31	08	625	GTRB		119
	CHINAM, INC.	2302336	4	405615	740835	T	3.0	31	08	400	GTRB		188
2376P	PARAMUS GOLF AND COUNTRY CLUB	4300095	2	405635	740530	F	2.9	03	46	200	GTRB		200
	PARAMUS GOLF AND COUNTRY CLUB	STORAGE POND		405635	740530	F	2.9	03	46		GTRB		350
4006PS	DUNDEE WATER POWER & LAND CO.	DUNDEE LAKE	G.S. PAPER	405308	740742	T	1.6	03	21		SPPAS		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	WHIPPANY	405208	740727	T	2.5	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	CHELTON CO	405208	740702	T	2.4	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	OKONITE CO	405143	740712	T	2.9	31	07		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE LAKE	MARCAL CO.	405405	740754	T	1.3	03	11		SPPAS		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	PASSAIC IN	405218	740702	T	2.2	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	TUCK IND.	405136	740704	T	3.0	31	07		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE CAN	PANTAGOTE	405204	740704	T	2.5	31	02		SP		
4025PS	KALAMA CHEMICAL, INC.	PASSAIC RIVER		405206	740745	T	2.6	03	21		SPPAS		
4037PS	GREAT FALLS HYDROELECTRIC CO	PASSAIC RIVER		405455	741058		4.0	31	08		SPPAS		
4041PS	STEPAN CHEMICAL COMPANY	SADDLE RIVER		405355	740447		1.5	03	54		SPSAD		2000
5014	RIDGEWOOD VILLAGE	4300013	GROVE ST. 4	405804	740636		4.5	03	51	298	GTRB		200
	RIDGEWOOD VILLAGE	4300014	E. RDGEWD.	405824	740548		4.9	03	51	201	GTRB		600
	RIDGEWOOD VILLAGE	2301644	SPRING	405824	740636		4.9	03	51	300	GTRB		300
	RIDGEWOOD VILLAGE	2301836	RAVINE	405830	740848		5.4	03	51	300	GTRB		200
	RIDGEWOOD VILLAGE	2303902	SALEM	405812	740500		4.8	03	51	320	GTRB		225
	RIDGEWOOD VILLAGE	2304170	STEVENS	405728	740612		3.8	03	51	300	GTRB		225
	RIDGEWOOD VILLAGE	2305931	WEST END	405820	740755		4.9	03	51	300	GTRB		
5015	RIDGEWOOD VILLAGE	2305158	WEISH	405805	740950	F	5.4	03	70	300	GTRB		450
	RIDGEWOOD VILLAGE	2513251	FARM WELL	405817	740900		5.2	03	70	287	GTRB		400
5016	RIDGEWOOD VILLAGE	2301443	MAIN	405706	740824		3.8	03	22	300	GTRB		350
	RIDGEWOOD VILLAGE	2301770	PROSPECT	405748	740636		4.2	03	22	300	GTRB		400
	RIDGEWOOD VILLAGE	2302277	AKERMAN	405730	740630		3.8	03	22	303	GTRB		250
	RIDGEWOOD VILLAGE	2301835	GLEN ROCK	405812	740748		4.8	03	22	300	GTRB		150
	RIDGEWOOD VILLAGE	2304171	LEIGH	405711	740617		3.5	03	22	300	GTRB		125
	RIDGEWOOD VILLAGE	2304172	BROOK	405733	740815		4.2	03	22	300	GTRB		125
5085	HACKENSACK WATER COMPANY	4600065	2	405221	740157		4.5	03	04	350	GTRB		180
	HACKENSACK WATER COMPANY	4600066	3	405248	740143		4.4	03	04	350	GTRB		175
	HACKENSACK WATER COMPANY	4600067	4	405242	740145		4.5	03	04	235	GTRB		
5087	HACKENSACK WATER COMPANY	2600914	1	405357	740216		3.7	03	23	168	GOSD		1550
	HACKENSACK WATER COMPANY	2601034	2	405355	740215		3.7	03	23	190	GOSD		1400
	HACKENSACK WATER COMPANY	2603017	ROCHELLE P	405458	740449		1.7	03	54	473	GTRB		200
5102	HACKENSACK WATER COMPANY	2304260	PARAMUS 1	405716	740545		3.6	03	46	28	GOSD		200
	HACKENSACK WATER COMPANY	2305502	PARAMUS 2	405716	740545		3.6	03	46	388	GTRB		150
	HACKENSACK WATER COMPANY	2305450	DUNDERHOOK	405654	740744		3.3	03	46	353	GTRB		
	HACKENSACK WATER COMPANY	SADDLE RIVER		405729	740543		3.9	03	46		SPSAD		
5111	HACKENSACK WATER COMPANY	HACKENSACK RIV		405651	740136	U	5.3	03	38		BKHAC		
	HACKENSACK WATER COMPANY	HIRSCHFIELD BR		405651	740136	U	5.3	03	38		BKHAC		
5127	LODI BOROUGH	4600068	ARNOT ST.	405240	740518		2.0	03	31	300	GTRB		160
	LODI BOROUGH	4600069	4	405249	740502		2.0	03	31	307	GTRB		295

 PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 405410 LAT. 740629 LON. (IN ORDER BY PERMIT NUMBER) - 02/08/90

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
	LODI BOROUGH	4600070	5	405249	740502		2.0	03	31	300	GTRB		355
	LODI BOROUGH	4600071	7	405249	740502		2.0	03	31	332	GTRB		355
	LODI BOROUGH	4600072	LAWRENCE	405217	740420	U	2.9	03	31	373	GTRB		500
	LODI BOROUGH	4600073	COLUMBIA 1	405240	740410	U	2.6	03	31	409	GTRB		375
	LODI BOROUGH	2601037	TERRACE	405157	740558		2.6	03	31	607	GTRB		190
	LODI BOROUGH	2601010	GARFIELD	405218	740538		2.3	03	31	459	GTRB		150
	LODI BOROUGH	2603185	HOME PLACE	405439	740301		3.1	03	31	450	GTRB		175
	LODI BOROUGH	2603183	CORABELLE	405231	740435		2.5	03	31	470	GTRB		200
5198	WALLINGTON BOROUGH	2603933	DUL	405131	740619		3.0	03	65	400	GTRB		140
	WALLINGTON BOROUGH	2603027	LESTER ST	405125	740710		3.2	03	65	400	GTRB		130
	WALLINGTON BOROUGH	4600075	8	405125	740750		3.4	03	65	503	GTRB		80
	WALLINGTON BOROUGH	4600074	5	405125	740750		3.4	03	65	506	GTRB		150
5234	HAWTHORNE BOROUGH	4300056	1	405757	740925	T	5.1	31	04	293	GTRB		175
	HAWTHORNE BOROUGH	4300057	3	405757	740925	T	5.1	31	04	300	GTRB		150
	HAWTHORNE BOROUGH	4300058	4	405757	740925	T	5.1	31	04	315	GTRB		250
	HAWTHORNE BOROUGH	4300059	5	405757	740925	T	5.1	31	04	300	GTRB		180
	HAWTHORNE BOROUGH	4300060	6	405757	740925	T	5.1	31	04	485	GTRB		250
	HAWTHORNE BOROUGH	4300061	3	405625	740940	T	3.8	31	04	300	GTRB		100
	HAWTHORNE BOROUGH	4300062	4	405625	740940	T	3.8	31	04	300	GTRB		75
	HAWTHORNE BOROUGH	4300063	5	405625	740940	T	3.8	31	04	285	GTRB		210
	HAWTHORNE BOROUGH	4300064	6	405625	740940	T	3.8	31	04	388	GTRB		150
	HAWTHORNE BOROUGH	4300065	7	405625	740940	T	3.8	31	04	369	GTRB		140
	HAWTHORNE BOROUGH	4300066	8	405625	740940	T	3.8	31	04	416	GTRB		210
	HAWTHORNE BOROUGH	4300067	10	405618	740918	T	3.5	31	04	300	GTRB		200
	HAWTHORNE BOROUGH	4600068	11	405618	740918	T	3.5	31	04	300	GTRB		400
	HAWTHORNE BOROUGH	4300069	12	405618	740918	T	3.5	31	04	300	GTRB		400
	HAWTHORNE BOROUGH	2303100	UTTER AVE	405741	740844		4.5	31	04	300	GTRB		175
	HAWTHORNE BOROUGH	2303099	GRAND AVE	405710	740920	F	4.3	31	04	300	GTRB		125
	HAWTHORNE BOROUGH	2303101	BAMFORD AV	405715	740942	F	4.5	31	04	300	GTRB		300
	HAWTHORNE BOROUGH	2303239	GOFFLE HIL	405814	740946		5.5	31	04	250	GTRB		150
	HAWTHORNE BOROUGH	2304139	CEDAR AVE	405648	740932	T	4.0	31	04	400	GTRB		300
	HAWTHORNE BOROUGH	2304691	FIRST ST.	405735	740940	F	4.8	31	04	400	GTRB		200
	HAWTHORNE BOROUGH	2305139	MAITLAND	405638	740940	F	4.0	31	04	400	GTRB		200
5282	GARFIELD WATER DEPARTMENT	2604016	1A	405256	740651		1.5	03	21	400	GTRB		300
	GARFIELD WATER DEPARTMENT	2604063	2	405312	740648	U	1.1	03	21	475	GTRB		150
	GARFIELD WATER DEPARTMENT	2604010	5	405209	740638		2.3	03	21	276	GTRB		150
	GARFIELD WATER DEPARTMENT	2604064	BC	405250	740742		1.9	03	21	405	GTRB		400
5317	FAIR LAWN BOROUGH	2600465	16	405540	740830		2.5	03	17	413	GTRB		140
	FAIR LAWN BOROUGH	2601197	19	405438	740818		1.7	03	17	400	GTRB		260
	FAIR LAWN BOROUGH	4300097	14	405645	740815		3.4	03	17	400	GTRB		150
	FAIR LAWN BOROUGH	2600393	15	405535	740825	F	2.4	03	17	402	GTRB		500

Number of Observations: 152

ATTACHMENT A

To: Aetna Chemical File

From: Donna J. Restivo, HSMS III
Bureau of Planning and Assessment

Subject: Pre-sampling Assessment at Aetna Chemical on February 2, 1990

On February 2, 1990, Donna Restivo and Daniel Maltese of the NJDEP, Bureau of Planning and Assessment (BPA) conducted a Pre-sampling Assessment (PSA) at Aetna Chemical in Elmwood Park, Bergen County. NJDEP personnel arrived at Aetna at 1005 hours and met with Robert Baldanzi owner of Aetna. The weather was cloudy and approximately 45 degrees. Main Trucking is located behind the site.

Mr. Baldanzi stated that Aetna was a chemical distributor which received chemicals by carload, truckload or railroad and transferred the chemicals into smaller containers such as 55-gallon drums or in 5,000-gallon bulk. Smaller quantities were poured from larger quantities by spigots. No wastes were generated. Aetna also blends and makes detergents on special order.

Mr. Baldanzi stated operations began at this location in 1960. The laboratory on site is no longer used. There is one underground storage tank, a 500-gallon fuel oil tank. Ten aboveground storage tanks ranging from 6,000 to 25,000 gallons are present on site.

NJDEP personnel observed the following upon walking around the facility:

- An OVA reading of 8 to 9 ppm near an old drainage pipe on the south side of the building.

- The aboveground storage tanks (AGST) closest to the building had no containment. The four AGSTs in the back were diked. Overhead pipes lead from the tanks to the building. No vegetation was present in the tank area.

- The drum storage area was not contained. Empty drums were rusted.

- Numerous readings were noted on the OVA throughout the inspection. Also stained soil was observed in various areas.

- A hole was present in the side of the building where drums are filled from the AGSTs. A drainage pathway from the hole to the outside soil was observed.

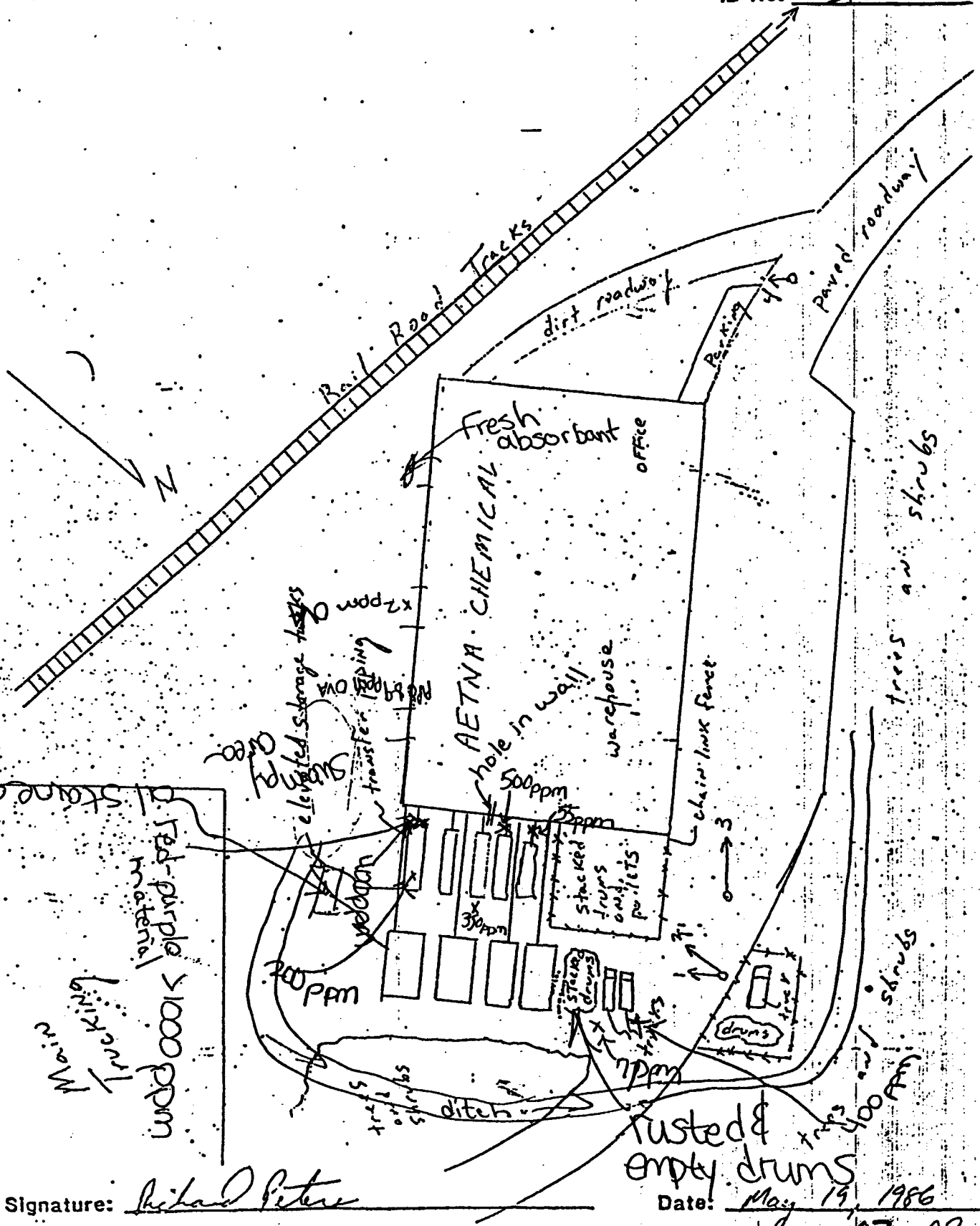
NJDEP personnel informed Mr. Baldanzi that they would come back to sample the site. Mr. Baldanzi stated he would like a copy of the results. NJDEP personnel left the site at 1115 hours.

MALCOLM PIRNIE

MAPS AND SKETCHES

Site: Aetna Chemical

ID No. 310



Signature: Richard Peters

Date: May 19, 1986

43 A2

ATTACHMENT B

Aetna Chemical Corporation is a prime distributor for the country's basic producers of heavy and fine chemicals. This service embraces the warehousing and delivery of chemicals in the manufacturers' original containers and repackaging of bulk chemicals. Buyers are thereby guaranteed quick service of quality chemicals at competitive prices.

Aetna Chemical Corporation will serve you whether your chemical and maintenance needs are large or small. If your less-than-carload chemical requirements include items that are not listed in this catalogue or are not regularly stocked, arrangements will be made to carry them in the Aetna Chemical Corporation inventory to assure prompt deliveries to you.

Aetna Chemical Corporation
Wallace Street Extension
Elmwood Park, New Jersey 07407

We've carved our place in the Chemical Industry...

and Bayonne Barrel.

(over)

B' 45

ver
0 years
of
ervice

A selected list
of the quality products
we stock . . .

all us at
201) 796-0230

And that place is supplying you with quality chemicals from every well known name in the industry.

Names that became well known because they care enough about quality to make certain it's the key ingredient in all their products.

And from quality products, satisfied customers grow.

Before you place your next order, check with Aetna for quality products at the right price.

waste Disposal
and Bayonne Barrel.

B246

.ES
ACETIC ACID
ACETIC ANHYDRIDE
ACETONE, C.P.
AEROTHENE (Dow-chlorinated solvent)
ALUMINUM SULPHATE
AMMONIUM BICARBONATE
AMMONIUM BIFLUORIDE
AMMONIUM CHLORIDE
AMMONIUM NITRATE
AMMONIUM SULPHATE
AMYL ACETATE
AMYL ALCOHOL
ANHYDROUS AMMONIA
AQUA AMMONIA
AUTO DRI

~~BENTONITE CLAY~~
~~BENZENE~~
BORAX
BORIC ACID
BUTYL ACETATE
BUTYL ALCOHOL
BUTYL CARBITOL
BUTYL CELLOSOLVE
BUTYRIC ACID

CALCIUM CHLORIDE (Peladow)
CALCIUM NITRATE
CALCIUM SULFATE
CARBITOL ACETATE
CARBITOL SOLVENT
CARBON TETRACHLORIDE
CARBONATE OF POTASH
CARBOWAX
CAUSTIC POTASH
CAUSTIC SODA
CELLOSOLVE ACETATE
CELLOSOLVE SOLVENT
CHLORINE (Liquid, Powdered, Tablets) -150 lb 1950# /yr.
CHLOROFORM
CHLOROTHENE
CHROMIC ACID
CITRIC ACID
COPPER SULFATE
CRESYLIC ACID
CYANIDE
CYCLOHEXANONE
CYCLOHEXANOL

DENATURED ALCOHOL
DETERGENTS
DICALCIUM PHOSPHATE

DIETHANOLAMINE
DIETHYLENE GLYCOL
DIETHYLENE TRIAMINE
DIPOTASSIUM PHOSPHATE
DIPROPYLENE GLYCOL
DI SODIUM PHOSPHATE
DISTILLED WATER
DOWFROST
DOW THERM SR-1

EPSOM SALT
ETHYL ACETATE
ETHYL ALCOHOL
ETHYLENE DIAMINE
ETHYLENE DICHLORIDE
ETHYLENE GLYCOL

FORMALDEHYDE
FORMIC ACID

GLACIAL ACETIC ACID
GLYCERINE

HEXYLENE GLYCOL
HYDROCHLORIC ACID
HYDROFLUORIC ACID
HYDROGEN PEROXIDE

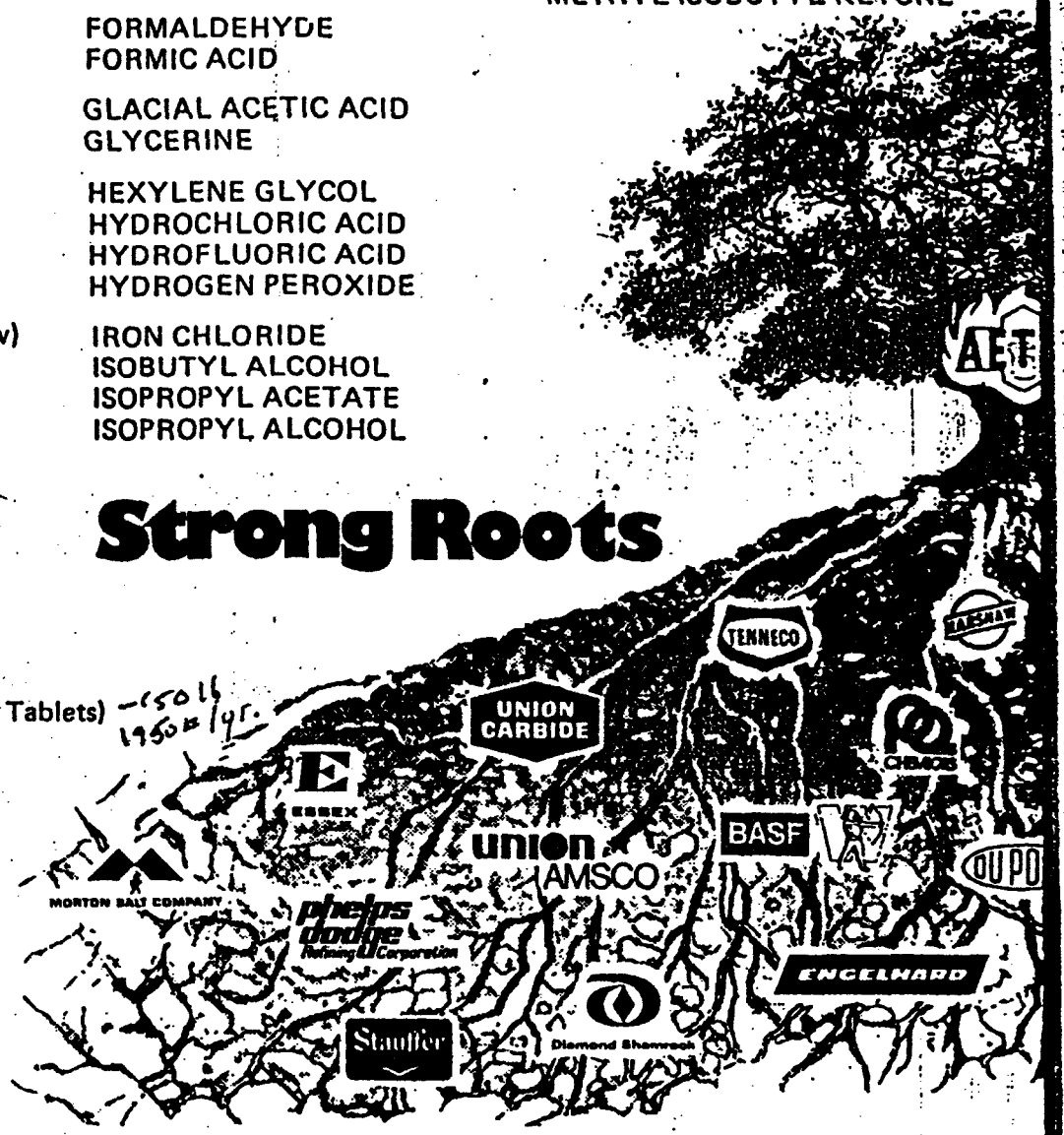
IRON CHLORIDE
ISOBUTYL ALCOHOL
ISOPROPYL ACETATE
ISOPROPYL ALCOHOL

KEROSENE
KETONES

~~LACQUER THINNER~~
LACTIC ACID
LIME, (Hydrated)

MAGNESIUM HYDROXIDE
MAGNESIUM CHLORIDE
METAL CLEANER
METHANOL
METHYL AMYL ALCOHOL
METHYL CARBITOL
METHYL CELLOSOLVE
METHYL ETHYL KETONE
METHYL ISOAMYL KETONE
METHYL ISOBUTYL KETONE

Strong Roots



...taken by Degen
nd Bayonne Barrel.

B3 47

(over)

CHLORIDE
2048, 66, 55, 200
SPIRITS
OIL
AMMONIUM PHOSPHATE
SODIUM PHOSPHATE
OETHANOLAMINE
PHOLINE

THA
TYL ALCOHOL
OPYL ALCOHOL
IC ACID

HODICHLOROBENZENE
IC ACID

PERCHLORETHYLENE
PHENOL
PHOSPHORIC ACID
PHOSPHORIC ANHYDRIDE
PINE OIL
POLY ETHYLENE GLYCOL
POLY PROPYLENE GLYCOL
POLY PHOSPHORIC ACID
POTASSIUM ALUM
POTASSIUM BICHROMATE
PHOSPHATES
PROPYLENE GLYCOL

ROCK SALT

SILICONES
SOAPS, Industrial
SODA ASH
SODIUM ACETATE
SODIUM BENZOATE
SODIUM BICARBONATE
SODIUM BICHROMATE
SODIUM BISULPHITE
SODIUM CHLORATE
SODIUM CHROMATE
SODIUM HEXAMETAPHOSPHATE
SODIUM HYDROSULPHITE
SODIUM NITRATE
SODIUM NITRITE
SODIUM PERBORATE

SODIUM SULPHYDRATE
SODIUM SULPHATE
SODIUM SULFIDE
SODIUM SULPHITE
SODIUM THIOSULFATE
SODIUM TRIPOLYPHOSPHATE
SOLVENTS
SPEED DRI
SULFURIC ACID

TERGITOL
TETRA POTASSIUM
PYRO PHOSPHATE
TETRA SODIUM PYRO
PHOSPHATE
TRIBUTYL PHOSPHATE
TOLUENE
TRICHLORETHYLENE
TRIETHANOLAMINE
TRIETHYLAMINE
TRIETHYLENE GLYCOL
TRIETHYLENE TETRA AMINE
TRI SODIUM PHOSPHATE
TURPENTINE
TYPE WASH

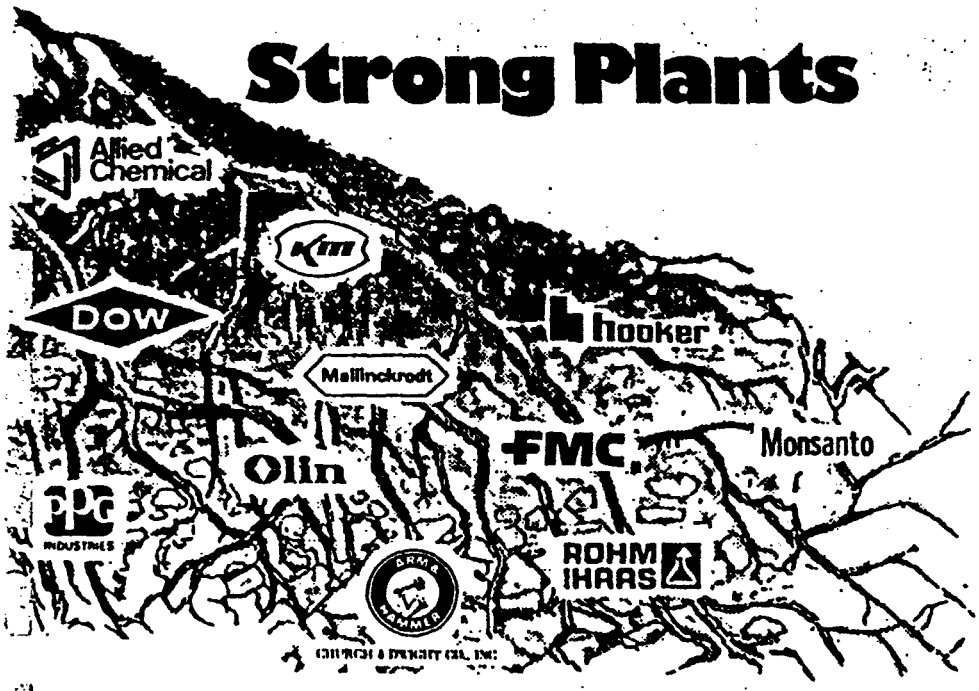
UNDERCOATING, Auto
UREA

XYLENE

ZINC CHLORIDE
ZINC NITRATE

*DETERGENTS
BORAXO HAND SOAP
(Pwd. & Waterless)
BORAXO DISPENSERS
*CUSTOM MADE CHEMICAL
PRODUCTS
*DEGREASERS
*FUEL OIL ADDITIVES
KLEENSALL (Machine
Dishwashing Detergent)
LIQUID HAND SOAP
PINE OIL DISINFECTANT
SWEEPING COMPOUND
*WATER TREATMENTS
(Boiler, Cooling)
WEED KILLER – A. Miller + Co.
WIPING RAGS B.J. Pratt – Pate Co.

*Manufactured by Aetna
Chemical Corporation



...ere is no waste generated. Empty barrels taken by Begen

B4 48

ATTACHMENT C

Idustrial Survey
ELMWOOD PARK HEALTH DEPT.

Name of business Aetna Chemical Corp.

Address Wallace St. Ext.

Phone 796-0230 Emerg. 575-8997 Person in charge Robert Baldanzi

Person contacted Robert Baldanzi S I C

Type of business Chemical distribution

Description of process Store, distribute and repackage industrial chemicals. Blending of chemical products.

O S H A inspection, date & type Approx. 5 years ago

D E P & E P A inspection date & type

Other inspections, date & type NJSDH Pharmaceutical 2 yrs. ago

Permits U.S.P.

D O T regulated materials Yes

Materials on site

Flammable Yes

Combustible

Corrosives

Oxidizing

Carcinogenics, known or possible Yes

Radioactive No

Environmemtal Controls None

Waste Disposal Claims there is no waste generated. Empty barrels taken by Begen and Bayonne Barrel.

(over)

C 50

Medical Program None Emergencies to N.J. Manufacturers Clinic, Clifton

Safety Program Films and supplier lectures

Disaster Plan None Claims site plans have been given to E.P.F.D. in the past

Union None

Other comments ~~At site since 1960, previously located on Linden Ave. from 1949 to 1960~~
Solids are delivered by tractor trailer and R.R. car. Liquids are delivered by tank truck. Large above ground bulk storgae tank farm contains isopropal alcohol, acetone, heavy aromatic naptha, methyl ethyl ketone, xylol, mineral spirits, toluene and chlorphene. Smaller bulk storage tanks contain hyrdrochloric acid, nitric acid, sulphuric acid, 1,1,1 trichlorethane, methyl ethyl ketone, and pale oil.
Small tank farm is not dyked, large farm is but lacks a finished bottom.
Warehousing and interior areas appear to be satisfactory. Attention should be given to the segregation of chemicals by reactivity. Outside soil areas around tank farm show evidence of material spillage. Numerous empty barrels are accumulated on platform. Several trucks some containing barrels claimed to belong to Aries Trucking are parked on or near property. 4 rusting barrels which are full found on platform, claimed to hold water.

Products list attached. Claims MSD sheets will be forwarded on all products.

Inspection by & date Edward L. Burbank June 20, 1983 Edward L. Burbank

~~Richard Lester, June 20, 1983~~

Copies to Mayor & Council

June 1983
ELB

C2 S1

ATTACHMENT D

Form VSC-005
6/82

NEW ... DEPARTMENT OF ENVIRONMENTAL PRO... N
DIVISION OF WASTE MANAGEMENT

02-11 NF

INCIDENT REPORT

D.W.M. ASSIGNED CASE NUMBER 84-03-14-07N		HOT LINE ☐	INDEXED ☐
DATE 03-14-84	TIME (Military) 1441	D.W.M. ID NO. 3233 COLE	

INCIDENT REPORTED BY:

NAME Robert Baldanzi		PHONE 796-0230
AFFILIATION		CODE
STREET		
CITY	STATE	ZIP CODE

INCIDENT LOCATION:

NAME AETNA CHEMICAL CORP		PHONE 796-0230	
STREET WALLACE ST EXT		UTM VERT	UTM HORIZ
CITY ELMWOOD PARK BERG	COUNTY	STATE	ZIP CODE

SOURCE OF SPILLED AND/OR DISCHARGED SUBSTANCE: Confirmed ☐ Alleged ☐ More Than 1 Source ☐

COMPANY NAME AETNA CHEMICAL CORP		PHONE	
CONTACT Rob Baldanzi	TITLE		
STREET		DEP COMPANY NO.	
CITY	COUNTY	STATE	ZIP CODE

SUSPECTED SPILLED AND/OR DISCHARGED SUBSTANCE: Confirmed ☒ Alleged ☐ More Than 2 Substances ☐

1. Gasoline (No led)			SUBSTANCE NO.
AMOUNT SPILLED 100-300	UNITS GALL	A/P/E E	S/L/G/M L
2.			SUBSTANCE NO.
AMOUNT SPILLED	UNITS	A/P/E	S/L/G/M

DATE OF INCIDENT 03-13-84	TIME (Military) PM	TEMP.	WEATHER	WIND (Dir. & Vel.)
SPILL ORIGIN 3K Underground Tank-water entered/gas left				CODE
CAUSE				CODE
WATER BODY AFFECTED				CODE
ASSOCIATED FIRE AND/OR HAZARDS				

INCIDENT REFERRED TO:

AGENCY	PHONE
CONTACT	AGENCY CODE

PRIMARY D.W.M. INVESTIGATOR	FOLLOWUP
NO FURTHER ACTION 3234 3/21/84	DATE

COMMENTS:

Water entered tank, gas displaced, during rains last night. Gas on driveway - none on soils
DPW contained w/sand, clean-up by SunRise Env Corp
797 0020 Peter ~~Sing~~ Wiarda

D 53

NEW JEF DEPARTMENT OF ENVIRONMENTAL P TION
DIVISION OF WASTE MANAGEMENT

D.W.M. ASSIGNED CASE NUMBER 84-03-14-7N		Page 2 of __
DATE 03-14-84	TIME ____	D.W.M. ID NO. 3333

Ken Burbank 796-1072

Fliesher's Brooke clean-up up - black-ish loil-ish substance in brooke - Assumes gas entered brook - but no evidence. ED est 100 gall. spilled, Ken Burbank ~~[illegible]~~ agrees.
The building inspector will contact me to discuss future of the underground tank.

D2
54

Aetna Chemical
Corporation
Wallace Street Extension Elmwood Park, New Jersey 07407 201-796-0230

March 14th, 1984

MR. PHILIP COLE
N.J. D.E.P.
DIV. OF WASTE MANAGEMENT
1259 Route #46
Building #3
Parsippany, New Jersey #07054

Att: Mr. Cole:

This letter is to confirm our phone conversation of today.

At sometime during the night of March 13th, 1984, persons unkown took the fill cap off of our gasoline tank. The heavy rains during the night allowed water into the fill line causing gasoline to be forced out. This gasoline was spilled upon our parking lot. The town police, fire and D.P.W. were called and contained the water/gas mixture on the asphalt parking lot.

The town called Sunrise Environmental Service to clean up and dispose of the material. This was all done on the 14th day of March. See attached copies of manifest.

If I may be of further help please call.

Very truly yours,

Aetna Chemical Corporation

RB/mm
Enc.

Robert Baldanzi
Vice President

AETNA

D3

ATTACHMENT E

Aetna Chemical Corporation Elmwood Park, New Jersey 07407 (201) 796-0230

August 18, 1986

Gary Bedroosian
Dept. of Environmental Protection
2 Babcock Place
West Orange, New Jersey
07052-5504

Dear Mr. Bedroosian,

On August 8, 1986, at some time in the early morning a seal in a valve on our Nitric Acid 42% fill line began to leak. At about 6:45 a.m. my brother, arriving for work, discovered this. I arrived at 6:50 a.m. and found my brother already putting on the approaiate protective gear and air pack. We went into the plant and shut off the line from the main tank. We estimated that about 25 to 30 gallons of Nitric Acid 42% had dripped out.

The fire department and police department were then notified as was the New Jersey Department of Environmental Protection. We called several other employees to come to work quickly. Soda ash was put down to neutralize and soak up the acid. It was left to dry so that no harm was present to any of the personel who swept it up. It was then put into two 55 gallon drums.

Our incident number is 86080801. As of this date I have called the companies recomended to pick up these two drums of soda ash several times and they have not returned my calls. I would like to keep these two drums near where we fill the acid so that if we ever have another accident the soda ash can be applied at once.

Yours truly,

Robert Baldanzi
President

RB/cb

E 57

Form VSC-005
4/85

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

02-11

INCIDENT NOTIFICATION REPORT

☐ TRENTON DISPATCH ☐ DIV. OF WASTE MANAGEMENT ☐ DIV. OF ENVIR. QUALITY ☐ DIV. OF WATER RESOURCES
☐ HQ FIELD OFFICE: ☐ NORTHERN ☐ METRO ☐ CENTRAL ☐ SOUTHERN

DATE 8.8.86 TIME (Military) 0830 REC'D BY BEDRUSIAN PHONE NO. 669-3960

INCIDENT REPORTED BY: CASE NO. 86.08.08.01M

NAME John Strong / TD OFFICER KAYNE PHONE 201-796-0700

STREET

CITY ELM STATE

AFFILIATION ~~EDE~~ EWOOD PARK

NATURE OF INCIDENT:
EMERGENCY: ☐ FIRE ☐ EXPLOSION ☐ DRUMS ☐ SPILL ☐ DERAILMENT ☐ MUA
COMPLAINT: ☐ SMOKE ☐ ODORS ☐ DUST ☐ SEWAGE ☐ NUISANCE ☐ ILLEGAL DUMPING
OTHER: ☐

INCIDENT LOCATION:
NAME (Site) ETNA Chemical ☐ UNK PHONE 201-796-0230
STREET Wallace ST
CITY ELM PK COUNTY Bergen STATE ZIP CODE

STATUS AT SCENE OF INCIDENT: Nitric Acid, 100 gallons.

DATE OF INCIDENT: TIME:

ANYONE HOSPITALIZED ☐ YES ☑ NO
AREA EVACUATED ☑ YES ☐ NO
CONTAMINATION OF ☐ AIR ☑ LAND ☐ WATER
PUBLIC EXPOSURE ☑ YES ☐ NO
RECEIVING WATER
WIND DIRECTION
POLICE AT SCENE ☑ YES ☐ NO
FIREMAN AT SCENE ☑ YES ☐ NO
ASSISTANCE REQUIRED ☐ YES ☑ NO
POTABLE WATER SOURCE ☐ YES ☐ NO
LOCATION TYPE ☐ CITY ☑ INDUSTRIAL ☐ RURAL

SOURCE OF INCIDENT/PROBLEM: ☑ KNOWN ☐ UNKNOWN

COMPANY NAME ETNA Chemical PHONE
CONTACT Robert Baldanzi TITLE
STREET
CITY COUNTY STATE ZIP CODE

IDENTITY OF SPILLED AND/OR DISCHARGED SUBSTANCE: ☐ KNOWN ☐ UNKNOWN

NAME OF SUBSTANCE Nitric Acid
AMT. 30-35 A/P/E ✓ SUBSTANCE CONTAINED ☐ YES ☐ NO ☐ UNKNOWN

OFFICIALS NOTIFIED. (A-310)

HEALTH DEPT.: PERSON Ed. Burbank PHONE 796-1072 DATE
LOCAL MUNIC.: PERSON PHONE DATE

INCIDENT REFERRED TO: ☐ BFO ☐ BERC ☐ DCJ ☐ DWR ☐ F&G ☐ BAPC ☐ HD

1. PERSON PHONE DATE
2. PERSON PHONE DATE

NFA 8/8/86 [illegible]

COMMENTS:
Robert Baldanzi, President,
Material Diluted with 600 gallons,
Leaking valve on storage tank
Being neutralized should be complete in 10-15 minutes
Area has been [illegible]
[illegible]

COPIES: White - File Yellow - Trenton Dispatch Pink - DWM Enforcement

E2
58

ATTACHMENT F

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Jorge H. Berkowitz, Ph.D.
Acting Director

(609) 292-1637
Fax # (609) 984-7938

June 14, 1989

Boswell Engineering
330 Phillips Avenue
South Hackensack, New Jersey 07606

ATTN: Anthony Gencarelli

022100

Dear Mr. Gencarelli:

RE: Garfield Water Department
VOC Contamination

Unacceptable levels of volatile organic contamination, particularly trichloroethhylene and tetrachloroethylene have been detected in the Garfield Water Department Distribution System for some time. Their source has beeen verified as emanating from supply wells in Elmwood Park and at Midland Avenue. The Bureau of Safe Drinking Water (Bureau) has directed that remedial measures be instituted to bring water to within acceptable limits.

A permit was issued by the Bureau on July 22, 1988 for the construction of packed column aeration facilities, an acceptable treatment technology for this problem. Accordingly, the Bureau whole heartedly endorses the expedient construction of said treatment facilities.

Sincerely,

Barker Hamill, Chief
Bureau of Safe Drinking Water

BH:BOSWELL:jh

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Recycled Paper

F 60

ATTACHMENT G

City of Garfield
New Jersey

DEPARTMENT OF PUBLIC WORKS
(201) 546-2200
478-9081

Mr. Nunzio Santora
Superintendent

Joanne Romano
Secretary

March 22, 1989

PWID 0221001

State of New Jersey
Department of Enviromental Protection
Division of Water Resources
Bureau of Safe Drinking Water
CN -029
Trenton, New Jersey 08625

Dear Mr. Monaco:

Please be advised that the City of Garfield Water Department has shut down effective 3/20/89 all of our wells, both in the Garfield well fields and the Elmwood Park well fields. We will not be restarting any of these fields until air strippers are built. The expected completion will not be until the end of 1989 or early 1990.

Please note that at this time, I feel that I need only (1) #280 sample taken. We are currently buying our water from Passaic Valley Water Company. The only exception to this would be in an emergency with our supply. If it is needed at that time then we would use our Elmwood Park wells # 1,4,10,12 and 14 until repairs could be made to our supply lines from Passaic Valley Water Company.

Thank you for your attention to this matter. If any questions, please feel free to contact me.

Sincerely,

Mr. Michael J. Sferruzzo

Mr. Michael J. Sferruzzo
Licensed Water Operator

cc: Mr. William Boyle
Mr. Nunzio Santora
file

G 62

ATTACHMENT H

TCT - St. Louis

formerly Envirodyne Engineers, Inc.

Consulting Engineers, Scientists and Analytical Services

1908 Innerbelt Business Center Drive
St. Louis, Missouri 63114-5700
(314) 426-0880
Fax (314) 426-4212

May 29, 1990
3540-00002

Mr. Frank Sorce
NJDEP/BEMQA
25 Arctic Parkway
Trenton, New Jersey 08638

Dear Mr. Sorce:

Enclosed are the results of analysis of samples from the Aetna Chemical site received for analysis by TCT-St. Louis (formerly Envirodyne Engineers, Inc.) under the X-408 Task IV (CLP) contract held by Envirodyne. The samples included in this report were received by the laboratory on April 20, 1990, and full CLP organics and inorganics analyses were requested. Listed below are the samples received with their laboratory numbers.

Site ID	TCT Lab #
Soil 1	90002235
Soil 2	90002236
Soil 3	90002237
Soil 4	90002238
Soil 5	90002239
Soil 6	90002240
Soil 7	90002241
Soil 8	90002242
Soil 9	90002243
Soil 10	90002244
Sed 1	90002245
Sed 2	90002246
Field Blank	90002248
Trip Blank	90002247 (Volatile analysis only)

Because the St. Louis office of Envirodyne was purchased on May 1, 1990, and became TCT-St. Louis only on that date, some of the documentation included in this data report contains the name and logo of Envirodyne, while some uses the new name. We have adopted "TCT" as our new laboratory code, but because TCT exists as a separate entity (in St. Paul, Minnesota) this code can be used only as long as the parent laboratory is not a participant in the same program.

The soil and sediment samples were screened by GC in order to determine which protocol was to be used for BNA and Pesticide/PCB analysis. As a result of the screening, Soils 1,2,3,4,7,8, and 10 were extracted by the medium level protocol. The remaining soils and sediments 1 and 2 were extracted by the low level CLP protocol. Soil 10 had a pH of 2, while Soils 4, 5, and 6 had a pH of 4. Soils 9 and 10 had a layer of water above the solid portion, so were decanted before extraction. The results of BNA and Pesticide/PCB analysis of those two samples are corrected for the decanted percent solids.

The pesticide extract of Soil 5 MSD contained a peak which was confirmed on second column to be heptachlor epoxide. The extract was not run on GC/MS for further confirmation because the sample and sample MS did not contain this peak. It is assumed that the peak was due to either laboratory contamination or breakdown of the heptachlor spike.

A number of sample reruns for BNAs are included in the data package. Internal standards were out of control on two injections for Soils 9, 10, Sediment 2, and the medium level method blank. The reinjection of Sed 2 is labelled "RE DL" because it also was diluted because analytes were outside the calibration range on the original run. Soils 3, 6, 5 MS, 5 MSD, and 8 were also injected diluted because of the level of analytes in the original run. Internal standards were out of control on all extracts of both Soil 5 and Soil 2 (sample, matrix spike, and matrix spike duplicate), but no reinjections were done because of the duplication of results.

The reported analyses of the soil and sediments for volatiles include a number of runs that were outside the holding times. This non-conformance occurred because many runs were made that had analytes outside the calibration range on both low and medium level protocols. In addition, the analysis of some of the samples (Sediment 2, for example) showed a marked lack of reproducibility in successive analyses. We feel that the levels of analytes detected was greatly affected by the matrix of the samples, although we are confident that the qualitative identifications are valid. The multiple runs of Sed 2 were made in order to give some measure of confidence as to the true level of 1,1,1-trichloroethane in the sample. Unfortunately, poor duplication of results was obtained for the various runs. Attached to this chronology is a memo from the GC/MS section leader listing the dates and dilutions of the multiple runs of the samples for which the submitted runs were past the holding times.

The trip blank for volatile analysis contained analytes above CLP CRDLs. A method blank was run in our laboratory on April 16 which consisted of our laboratory blank water pulled at the same time and place as the water used for the trip blanks. This method blank contained no CLP analytes.

Attached to this narrative are an analysis chronology for the Aetna samples and a variety of laboratory documents pertaining to this case. If you have any questions about this report, please contact me at (314) 426-0880.

Sincerely,

Margaret C. Winter

Margaret C. Winter
Project Manager

H 66

ANALYSIS CHRONOLOGY, AETNA CHEMICAL

4/14/90	Initial calibration for water volatiles on 59702E
4/16/90	Bottles shipped to NJDEP
4/20/90	All samples received at laboratory
4/24/90	Digestion of soils and sediments for GFAA metals analysis Extraction of soils and sediments by medium level protocol for screening
4/25/90	Extraction of field blank for BNAs and Pesticide/PCBs Initial calibration for BNA analysis, 59703F Loss on drying, undecanted soil and sediment samples
4/26/90	Digestion of field blank for GFAA metals analysis Preparation of Soils 1-6 for cyanide analysis Digestion of field blank for ICP analysis GC screen of organic extractables Loss on drying, decanted Soil 10 Initial calibration for low soil volatiles, 59852B
4/27/90	Analysis of Soil 1, low level, 59852B Analysis of potassium, all samples Preparation of Soils 7-10, Seds 1 and 2, and field blank for cyanide Analysis of trip blank and field blank for volatiles, 59702E
4/28/90	Initial calibration for medium level volatiles, 59852B
4/29/90	Extraction of low level soils and sediments for BNA and Pesticide/PCBs Analysis of medium level volatiles Soil 3, Soil 3 RE DL, and Soil 4 on 59852B
4/30/90	Analysis of all samples for cyanide Extraction of medium level BNAs and Pesticides/PCBs Injection of BNA field blank and water method blank, 59703F Injection of medium level volatiles, Soil 7 and 8, 59852B
5/01/90	Digestion and analysis for Hg on all samples
5/02/90	Initial calibration for medium level soils, 59702E Analysis of Soil 8 RE DL volatile, 59702E

ANALYSIS CHRONOLOGY, AETNA CHEMICAL

5/03/90	GFAA analysis of field blank for Tl, Pb, As, and Se Initial calibration for BNA analysis on 59701D Volatile analysis, medium level, Soils 10, 5, 6, and 2, 59702E
5/04/90	Initial calibration for low level soil volatiles, 59702E Analysis of low level volatiles, Sed 2, Sed 2 MS, Sed 2 MSD, and Sed 2 MSD RE, 59702E Injection of BNAs: soil blank (med), Soils 1,2,3,7,8,10, and 2 MS/MSD on 59701D ICP analysis: Cd, V, Ni, Be, Al (all soils); Fe (1,3,4,5,6,10, and Sed 2); Mg (1, 3-7, 9, 10, Sed 1 and Sed 2); Pb (Soils 1,7,8,9, and Sed 2); and Ba (Soils 4-10 and Sed 1 and 2)
5/05/90	Analysis of medium level volatiles Soil 2 MS and Soil 2 MSD, 59702E
5/06/90	Initial calibration for BNAs, 59701D, and injection of Method Blank (low soil), Soils 5,6,9, Sed 2, and Soil 5 MS/MSD
5/07/90	ICP analysis of Cu and Cr on all soils and sediments GFAA analysis of Ag and Tl on all soils and sediments Analysis of Ag and Sb on field blank Reanalysis of Tl on field blank
5/08/90	VOA medium level analysis Soil 9, Sed 1, Sed 2 RE, Soil 9 RE DL, and SED 2 RE DL on 59702E ICP analysis: Fe (Soil 2,7,8,9, Sed 1); Mg (Soils 2 and 8); Ca, Zn, Na (all soils and sediments); Pb (Soil 2); and Ba (Soils 1-3) BNA analysis: Method Blank RE (med), SED 2 RE DL, Soil 4, Soil 10 RE, Soil 9 RE, SED 1, Soil 5 MS RE DL
5/09/90	First column analysis for pesticide/PCBs (through 5/11/90) GFAA analysis: Sb (all soils and sediments); Pb (Soils 4,5,6,7,8,9,10, and Sed 1); MSA for Ag (Soil 7) ICP analysis of field blank: Al,Ca, Be, Cd, Cr, Ba, Fe, Mg, Na, V, Mn, Zn, Cu, and Co
5/10/90	ICP analysis of field blank for Ni BNA analysis: Soil 3 RE DL, Soil 8 RE DL, Soil 6 RE DL
5/14/90	GFAA analysis, Se and As on all soil and sediment samples
5/18/90	Initial calibration for BNAs on 59701D

ANALYSIS CHRONOLOGY, AETNA CHEMICAL

5/23/90	Loss on drying on decanted Soil 9
5/25/90	BNA analysis of Soil 5 MSD RE DL

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-1

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3423

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec 25 Date Analyzed: 05/08/90

Column: (pack/cap) CAP Dilution Factor: 1

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	2	J
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	3	J
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	(11)	
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U

H 732 70

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SED-1

Lab Name: TCT ST.LOUIS Contract: 3F40

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3423

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 25 Date Analyzed: 05/08/90

Column: CAP Dilution Factor: 1

Number TICs found: 6

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	1.16	13	J
2.		C9H12 ISOMER	19.54	12	J
3.		C9H12 ISOMER	20.56	9	J
4.	104767	1-HEXANOL,2-EHTYL-	22.38	9	J
5.		UNKNOWN	28.10	7	J
6.		METHYL NAPHTHALENE ISOMER	29.30	12	J
7.					
8.					
9.					
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-1

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 30 (g/ml) G Lab File ID: 02665

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

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
100-51-6	Benzyl alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
39638-32-9	bis(2-chloroisopropyl)ether	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
65-85-0	Benzoic Acid	2100	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	2100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

H9 34

72

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED 1

Lab Name: TCT-ST.LOUIS Contract: 5540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2o65

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	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	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	440	U
84-74-2	Di-n-butylphthalate	54	J
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	890	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)phthalate	140	J
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	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

H10 35 B

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SED-1

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 30 (g/mL) G Lab File ID: D2665

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

Number TICs found: 13

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.33	3400	J
2.		UNKNOWN	4.65	250	J
3.		UNKNOWN ALKANE	4.86	210	J
4.		UNKNOWN	6.80	1300	J
5.		UNKNOWN	8.84	470	J
6.		UNKNOWN	10.59	120	J
7.		UNKNOWN	15.61	230	J
8.		UNKNOWN	17.29	180	J
9.		UNKNOWN ALKANE	18.41	830	J
10.	4337659	HEXANEDIOIC ACID, MONO(2-EHTYLHEXYL)ESTER	25.63	1500	J
11.		UNKNOWN	29.24	670	J
12.		UNKNOWN	31.89	750	J
13.		UNKNOWN	38.86	1300	J
14.					
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FORM I SV-TIC 1/87 Rev.

H11 36

EPA SAMPLE NO.

SED1

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK 4

Matrix: (soil/water) SOIL Lab Sample ID: 90002245

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 24.8 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 5 Dilution Factor: 1

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	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	21	U
72-55-9	--4,4'-DDE	21	U
72-20-8	--ENDRIN	21	U
33213-65-9	--ENDOSULFAN II	21	U
72-54-8	--4,4'-DDD	21	U
1031-07-8	--ENDOSULFAN SULFATE	21	U
50-29-3	--4,4'-DDT	21	U
72-43-5	--METHOXYCHLOR	110	U
53494-70-5	--ENDRIN KETONE	21	U
5103-71-9	--ALPHA-CHLORDANE	110	U
5103-74-2	--GAMMA-CHLORDANE	110	U
8001-35-2	--TOXAPHENE	210	U
12674-11-2	--AROCLOR-1016	110	U
11104-28-2	--AROCLOR-1221	110	U
11141-16-5	--AROCLOR-1232	110	U
53469-21-9	--AROCLOR-1242	110	U
12672-29-6	--AROCLOR-1248	110	U
11097-69-1	--AROCLOR-1254	210	U
11096-82-5	--AROCLOR-1260	210	U

H1237 75

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-1

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FD~~ Field

Matrix (soil/water): SOIL Lab Sample ID: 90002245

Level (low/med): LOW Date Received: 04/20/90

% Solids: 75.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8960		*	P
7440-36-0	Antimony	6.0	U	N	F
7440-38-2	Arsenic	0.69	B	N*	F
7440-39-3	Barium	40.9	B	E*	P
7440-41-7	Beryllium	2.8			P
7440-43-9	Cadmium	1.0	B		P
7440-70-2	Calcium	544	B	E*	P
7440-47-3	Chromium	15.3		*	P
7440-48-4	Cobalt	2.5	U		P
7440-50-8	Copper	17.6			P
7439-89-6	Iron	40600			P
7439-92-1	Lead	25.8			F
7439-95-4	Magnesium	1290		*	P
7439-96-5	Manganese	86.3			P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	15.6			P
7440-09-7	Potassium	299	B		A
7782-49-2	Selenium	0.25	U	N	F
7440-22-4	Silver	0.25	U		F
7440-23-5	Sodium	91.6	B		P
7440-28-0	Thallium	0.25	U		F
7440-62-2	Vanadium	31.6			P
7440-66-6	Zinc	23.3		N	P
	Cyanide	0.33	U		AS

Color Before: LT.BROWN Clarity Before: Texture: MED

Color After: ORANGE Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN 7/8

H 13 76

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPL NO.

SED-2

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: 12345 SDG No. FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3373

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/04/90

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	17	
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	68	
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SED-2

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3373

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/04/90

Column: CAP Dilution Factor: 1

Number TICs found: ~~8~~ 10 M White 5-27-90

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN TRIMETHYL ALKANE	20.76	83	J
2.	UNKNOWN	21.00	23	J
3.	UNKNOWN ALKANE	21.15	95	J
4.	UNKNOWN ALKANE	21.72	113	J
5.	UNKNOWN	21.94	54	J
6.	UNKNOWN ALKANE	22.33	64	J
7.	UNKNOWN ALKANE	22.92	49	J
8.	UNKNOWN ALKANE	23.63	49	J
9.	UNKNOWN ALKANE	24.78	64	J
10.	UNKNOWN	25.59	11	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2 RE

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3424

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/08/90

Column: (pack/cap) CAP Dilution Factor: 1

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	U
67-64-1	Acetone	16 ~~61~~	U
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	190	
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	730	E
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	J
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	14	
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	30	

BSBe 5-24

FORM I VOA 1/87 Rev

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SED-7 RE

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3424

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/08/90

Column: CAP Dilution Factor: 1

Number TICs found: 19 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	98828	BENZENE,(1-METHYLETHYL)-	18.27	31	J
2.		TRIMETHYL ~~BENZENE~~ alkane ISOMER	18.86	56	J
3.	111842	NONANE	20.01	98	J
4.		UNKNOWN	20.46	65	J
5.		TRIMETHYL HEXANE ISOMER	20.76	240	J
6.		UNKNOWN	20.99	79	J
7.		C11H24 ISOMER	21.17	310	J
8.		UNKNOWN ALKANE	21.74	380	J
9.		UNKNOWN ALKANE	21.94	250	J
10.		UNKNOWN	22.09	52	J
11.		C10H22 ISOMER	22.33	210	J
12.		UNKNOWN	22.68	98	J
13.		UNKNOWN ALKANE	22.92	210	J
14.		UNKNOWN ALKANE	23.62	120	J
15.		UNKNOWN	24.43	31	J
16.		UNKNOWN	24.82	120	J
17.		UNKNOWN ALKANE	25.58	93	J
18.		UNKNOWN ALKANE	25.98	36	J
19.		UNKNOWN ALKANE	28.11	51	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2(RE)DL

Lab Name: TCT ST.LOUIS Contract: 5540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 31 mwuller 5-27-90 (g/mL) G Lab File ID: >E3426

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/08/90

Column: (pack/cap) CAP Dilution Factor: x5

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	82	U
74-83-9	Bromomethane	82	U
75-01-4	Vinyl Chloride	82	U
75-00-3	Chloroethane	82	U
75-09-2	Methylene Chloride	11	J
67-64-1	Acetone	150	
75-15-0	Carbon Disulfide	41	U
75-35-4	1,1-Dichloroethene	41	U
75-34-3	1,1-Dichloroethane	290	
540-59-0	1,2-Dichloroethene (total)	41	U
67-66-3	Chloroform	41	U
107-06-2	1,2-Dichloroethane	41	U
78-93-3	2-Butanone	82	U
71-55-6	1,1,1-Trichloroethane	980	
56-23-5	Carbon Tetrachloride	41	U
108-05-4	Vinyl Acetate	82	U
75-27-4	Bromodichloromethane	41	U
78-87-5	1,2-Dichloropropane	41	U
10061-01-5	cis-1,3-Dichloropropene	41	U
79-01-6	Trichloroethene	12	J
124-48-1	Dibromochloromethane	41	U
79-00-5	1,1,2-Trichloroethane	41	U
71-43-2	Benzene	41	U
10061-02-6	trans-1,3-Dichloropropene	41	U
75-25-2	Bromoform	41	U
108-10-1	4-Methyl-2-pentanone	82	U
591-78-6	2-Hexanone	82	U
127-18-4	Tetrachloroethene	29	J
79-34-5	1,1,2,2-Tetrachloroethane	41	U
108-88-3	Toluene	41	U
108-90-7	Chlorobenzene	41	U
100-41-4	Ethylbenzene	27	J
100-42-5	Styrene	41	U
1330-20-7	Xylene (total)	38	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SED-2 RE 01

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 1 m water 5-27-90 (g/mL) G Lab File ID: >E3426

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 Date Analyzed: 05/08/90

Column: CAP Dilution Factor: 5

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98828	BENZENE,(1-METHYLETHYL)-	18.27	150	J
2.	UNKNOWN	18.86	74	J
3. 124185	DECANE	20.01	230	J
4.	UNKNOWN	20.50	65	J
5.	TRIMETHYL OCTANE ISOMER	20.72	140	J
6. 17302328	NONANE,3,7-DIMETHYL-	21.19	140	J
7.	UNKNOWN	21.72	120	J
8	UNKNOWN	21.94	110	J
9.	UNKNOWN	22.35	110	J
10.	UNKNOWN ALKANE	22.92	240	J
11.	UNKNOWN	24.82	98	J
12.	UNKNOWN ALKANE	25.58	110	J
13.	UNKNOWN	25.98	41	J
14.	UNKNOWN ALKANE	28.11	57	J
15.	UNKNOWN	28.53	57	J
16.	UNKNOWN	29.31	74	J
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2

Lab Name: TCI-ST.LOUIS Contract: 3540

Lab Code: TCI Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) G Lab File ID: >02652

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/07/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: x2

mwinter 5-24-90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	1100	U
111-44-4	bis(-2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
39638-32-9	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	5200	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	22000	E
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	58000	E
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5200	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5200	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U

HP

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2652

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/07/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: x 2 mwunter 5-24-90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5200	U
83-32-9	Acenaphthene	1200	
51-28-5	2,4-Dinitrophenol	5200	U
100-02-7	4-Nitrophenol	5200	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1500	
100-01-6	4-Nitroaniline	5200	U
534-52-1	4,6-Dinitro-2-methylphenol	5200	U
86-30-6	N-Nitrosodiphenylamine	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5200	U
85-01-8	Phenanthrene	2500	
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	U
206-44-0	Fluoranthene	1800	
129-00-0	Pyrene	3400	
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2200	U
56-55-3	Benzo(a)anthracene	1000	J
218-01-9	Chrysene	1400	
117-81-7	bis(2-Ethylhexyl)phthalate	25000	E
117-84-0	Di-n-octylphthalate	450	J
205-99-2	Benzo(b)fluoranthene > ~~both~~ combined	1500	
207-08-9	Benzo(k)fluoranthene	~~1100~~	~~U~~
50-32-8	Benzo(a)pyrene	2000	
193-39-5	Indeno(1,2,3-cd)pyrene	1100	
53-70-3	Dibenzo(a,h)anthracene	1100	U
191-24-2	Benzo(g,h,i)perylene	7600	

H21 46

g.m.x. 5-24-90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

SED-2

Lab Name: ~~ENVIRODYNE ENGINEERS~~ TCT-St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/mL) G Lab File ID: > ~~02662~~ D2652 g.m.x. 5-24-90

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: ~~1~~ 2 m winter 5-24-90

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN C9H12 ISOMER	6.47	32000	J
2.	UNKNOWN ALKANE	10.07	1200	J
3.	UNKNOWN C10H14 ISOMER	10.35	1000	J
4.	UNKNOWN C10H14 ISOMER	10.44	1700	J
5.	UNKNOWN	10.76	920	J
6.	UNKNOWN	11.03	2600	J
7.	UNKNOWN	11.19	2000	J
8.	UNKNOWN	11.32	1700	J
9.	UNKNOWN C11H16 ISOMER	12.01	2000	J
10.	UNKNOWN C12H18 ISOMER	12.28	3000	J
11.	UNKNOWN	12.42	2500	J
12.	UNKNOWN C11H14 ISOMER	12.67	2500	J
13.	UNKNOWN	12.79	1000	J
14.	UNKNOWN C11H14 ISOMER	12.89	2400	J
15. 90120	NAPHTHALENE, 1-METHYL-	13.67	3000	J
16.	UNKNOWN C12H16 ISOMER	14.84	10000	J
17.	UNKNOWN C12H12 ISOMER	15.02	18000	J
18.	UNKNOWN C12H12 ISOMER	15.25	22000	J
19.	UNKNOWN C12H12 ISOMER	15.52	11000	J
20.	UNKNOWN	20.75	4600	J
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FORM I SV-TIC 1/87 Rev.

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-[illegible]

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) G Lab File ID: [illegible]02661

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: ~~5~~ 10

M. Winter 5-24-90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	5500	U
111-44-4	bis(-2-Chloroethyl)ether	5500	U
95-57-8	2-Chlorophenol	5500	U
541-73-1	1,3-Dichlorobenzene	5500	U
106-46-7	1,4-Dichlorobenzene	5500	U
100-51-6	Benzyl alcohol	5500	U
95-50-1	1,2-Dichlorobenzene	5500	U
95-48-7	2-Methylphenol	5500	U
39638-32-9	bis(2-chloroisopropyl)ether	5500	U
106-44-5	4-Methylphenol	5500	U
621-64-7	N-Nitroso-di-n-propylamine	5500	U
67-72-1	Hexachloroethane	5500	U
98-95-3	Nitrobenzene	5500	U
78-59-1	Isophorone	5500	U
88-75-5	2-Nitrophenol	5500	U
105-67-9	2,4-Dimethylphenol	5500	U
65-85-0	Benzoic Acid	26000	U
111-91-1	bis(2-Chloroethoxy)methane	5500	U
120-83-2	2,4-Dichlorophenol	5500	U
120-82-1	1,2,4-Trichlorobenzene	5500	U
91-20-3	Naphthalene	15000	
106-47-8	4-Chloroaniline	5500	U
87-68-3	Hexachlorobutadiene	5500	U
59-50-7	4-Chloro-3-methylphenol	5500	U
91-57-6	2-Methylnaphthalene	65000	~~E~~
77-47-4	Hexachlorocyclopentadiene	5500	U
88-06-2	2,4,6-Trichlorophenol	5500	U
95-95-4	2,4,5-Trichlorophenol	26000	U
91-58-7	2-Chloronaphthalene	5500	U
88-74-4	2-Nitroaniline	26000	U
131-11-3	Dimethylphthalate	5500	U
208-96-8	Acenaphthylene	5500	U
606-20-2	2,6-Dinitrotoluene	5500	U

not above scan M. Winter 5-24-90

H23

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2 RE DL

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLAN

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) Lab File ID: >D2661

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: ~~5~~ 10

5-24-90

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
99-09-2	3-Nitroaniline	26000	U
83-32-9	Acenaphthene	940	J
51-28-5	2,4-Dinitrophenol	26000	U
100-02-7	4-Nitrophenol	26000	U
132-64-9	Dibenzofuran	5500	U
121-14-2	2,4-Dinitrotoluene	5500	U
84-66-2	Diethylphthalate	5500	U
7005-72-3	4-Chlorophenyl-phenylether	5500	U
86-73-7	Fluorene	1000	J
100-01-6	4-Nitroaniline	26000	U
534-52-1	4,6-Dinitro-2-methylphenol	26000	U
86-30-6	N-Nitrosodiphenylamine	5500	U
101-55-3	4-Bromophenyl-phenylether	5500	U
118-74-1	Hexachlorobenzene	5500	U
87-86-5	Pentachlorophenol	26000	U
85-01-8	Phenanthrene	2200	J
120-12-7	Anthracene	5500	U
84-74-2	Di-n-butylphthalate	5500	U
206-44-0	Fluoranthene	970	J
129-00-0	Pyrene	4000	J
85-68-7	Butylbenzylphthalate	5500	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	5500	U
218-01-9	Chrysene	5500	U
117-81-7	bis(2-Ethylhexyl)phthalate	21000	
117-84-0	Di-n-octylphthalate	5500	U
205-99-2	Benzo(b)fluoranthene	5500	U
207-08-9	Benzo(k)fluoranthene	5500	U
50-32-8	Benzo(a)pyrene	5500	U
193-39-5	Indeno(1,2,3-cd)pyrene	5500	U
53-70-3	Dibenzo(a,h)anthracene	5500	U
191-24-2	Benzo(g,h,i)perylene	4400	J

H24

49
87

EPA SAMPLE NO.

SED-2 RE DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/mL) G Lab File ID: ~~D2657~~ D 2661

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 39 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: ~~1~~ 10

g.m.k. 5-29-90

m winter 5-24-90

Number TICs found: ~~17~~ 20 m winter 5-24-90

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN C9H12 ISOMER	6.20	48000	J
2.	UNKNOWN ALKANE	9.82	18000	J
3.	UNKNOWN C10H14 ISOMER	10.14	6200	J
4.	UNKNOWN C10H14 ISOMER	10.18	7600	J
5.	UNKNOWN	10.49	7100	J
6.	UNKNOWN	10.68	15000	J
7.	UNKNOWN	10.76	15000	J
8.	UNKNOWN C11H16 ISOMER	11.74	13000	J
9.	UNKNOWN C12H18 ISOMER	12.01	18000	J
10.	UNKNOWN	12.17	15000	J
11.	UNKNOWN	12.29	5800	J
12.	UNKNOWN C11H14 ISOMER	12.40	14000	J
13.	UNKNOWN	12.56	4900	J
14.	UNKNOWN C11H14 ISOMER	12.62	12000	J
15. 90120	NAPHTHALENE,1-METHYL-	13.38	17000	J
16.	UNKNOWN	14.59	27000	J
17.	UNKNOWN C12H12 ISOMER	14.75	52000	J
18.	UNKNOWN C12H12 ISOMER	14.98	60000	J
19.	UNKNOWN C12H12 ISOMER	15.25	28000	J
20.	UNKNOWN	20.44	23000	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				

FORM I SV-TIC 1/87 Rev.

H 25 88

EPA SAMPLE NO.

SED2 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 38.9 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	130	UDx
319-85-7	--BETA-BHC	130	UDx
319-86-8	--DELTA-BHC	130	UDx
58-89-9	--GAMMA-BHC	130	UDx
76-44-8	--HEPTACHLOR	130	UDx
309-00-2	--ALDRIN	130	UDx
1024-57-3	--HEPTACHLOR EPOXIDE	130	UDx
959-98-8	--ENDOSULFAN I	130	UDx
60-57-1	--DIELDRIN	260	UD
72-55-9	--4,4'-DDE	260	UDx
72-20-8	--ENDRIN	260	UD
33213-65-9	--ENDOSULFAN II	260	UD
72-54-8	--4,4'-DDD	260	UD
1031-07-8	--ENDOSULFAN SULFATE	260	UD
50-29-3	--4,4'-DDT	260	UD
72-43-5	--METHOXYCHLOR	1300	UD
53494-70-5	--ENDRIN KETONE	260	UD
5103-71-9	--ALPHA-CHLORDANE	1300	UDx
5103-74-2	--GAMMA-CHLORDANE	1300	UDx
8001-35-2	--TOXAPHENE	2600	UD
12674-11-2	--AROCLOR-1016	1300	UDx
11104-28-2	--AROCLOR-1221	1300	UDx
11141-16-5	--AROCLOR-1232	1300	UDx
53469-21-9	--AROCLOR-1242	1300	UDx
12672-29-6	--AROCLOR-1248	1300	UDx
11097-69-1	--AROCLOR-1254	2600	UD
11096-82-5	--AROCLOR-1260	2600	UD

FORM 1 PEST 1/87 Rev.

x - see form 1 for Dil 1:100 for actual DL's

H26 51 89

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

SED2 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK 4

Matrix: (soil/water) SOIL Lab Sample ID: 90002246

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 38.4 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 6 Dilution Factor: 100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	1300	UD
319-85-7	--BETA-BHC	1300	UD
319-86-8	--DELTA-BHC	1300	UD
58-89-9	--GAMMA-BHC	1300	UD
76-44-8	--HEPTACHLOR	1300	UD
309-00-2	--ALDRIN	1300	UD
1024-57-3	--HEPTACHLOR EPOXIDE	1300	UD
959-98-8	--ENDOSULFAN I	1300	UD
60-57-1	--DIELDRIN	2600	UD
72-55-9	--4,4'-DDE	2600	UD
72-20-8	--ENDRIN	2600	UD
33213-65-9	--ENDOSULFAN II	2600	UD
72-54-8	--4,4'-DDD	2600	UD
1031-07-8	--ENDOSULFAN SULFATE	2600	UD
50-29-3	--4,4'-DDT	2600	UD
72-43-5	--METHOXYCHLOR	13000	UD
53494-70-5	--ENDRIN KETONE	2600	UD
5103-71-9	--ALPHA-CHLORDANE	13000	UD
5103-74-2	--GAMMA-CHLORDANE	13000	UD
8001-35-2	--TOXAPHENE	26000	UD
12674-11-2	--AROCLOR-1016	13000	UD
11104-28-2	--AROCLOR-1221	13000	UD
11141-16-5	--AROCLOR-1232	13000	UD
53469-21-9	--AROCLOR-1242	13000	UD
12672-29-6	--AROCLOR-1248	13000	UD
11097-69-1	--AROCLOR-1254	26000	UD
11096-82-5	--AROCLOR-1260	26000	UD

H27 52 90

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SED-2

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~ Field

Matrix (soil/water): SOIL Lab Sample ID: 90002246

Level (low/med): LOW Date Received: 04/20/90

% Solids: 61.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8830		*	P
7440-36-0	Antimony	7.7	U	N	F
7440-38-2	Arsenic	4.1		NS*	F
7440-39-3	Barium	1810		E*	P
7440-41-7	Beryllium	1.3	B		P
7440-43-9	Cadmium	2.9			P
7440-70-2	Calcium	4850		E*	P
7440-47-3	Chromium	211		*	P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	187			P
7439-89-6	Iron	22900			P
7439-92-1	Lead	2500		*	P
7439-95-4	Magnesium	2510		*	P
7439-96-5	Manganese	369			P
7439-97-6	Mercury	0.61			CV
7440-02-0	Nickel	11.9	B		P
7440-09-7	Potassium	748	B		A
7782-49-2	Selenium	0.74	B	NW	F
7440-22-4	Silver	4.0			F
7440-23-5	Sodium	578	B		P
7440-28-0	Thallium	0.31	U		F
7440-62-2	Vanadium	26.3			P
7440-66-6	Zinc	252		N	P
	Cyanide	0.41	U		AS

Color Before: DK.BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

H28 53

91

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

SOIL-1

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No. FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002235

Sample wt/vol: ~~2.5~~ 2.0 (g/mL) G Lab File ID: >B3736

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 13 Date Analyzed: 04/27/90

Column: (pack/cap) PACK Dilution Factor: 2.5

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	16	
67-64-1	Acetone	26	J
75-15-0	Carbon Disulfide	14	U
75-35-4	1,1-Dichloroethene	14	U
75-34-3	1,1-Dichloroethane	4	J
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	26	J
71-55-6	1,1,1-Trichloroethane	310	
56-23-5	Carbon Tetrachloride	14	U
108-05-4	Vinyl Acetate	29	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	61 ~~29~~ ~~U~~	MWinke 5-25-9
591-78-6	2-Hexanone	29	U
127-18-4	Tetrachloroethene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-88-3	Toluene	72	
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	42	
100-42-5	Styrene	14	U
1330-20-7	Xylene (total)	810	

FORM I VOA 1/87 Rev

H29

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-1

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL w water 4-25-90 Lab Sample ID: 90002235

Sample wt/vol: ~~2.9~~ 2.0 (g/mL) G Lab File ID: >83736

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 13 Date Analyzed: 04/27/90

Column: PACK Dilution Factor: 2.5

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	31.09	4300	J
2.	ETHYL METHYL BENZENE ISOMER	33.71	550	J
3.				
4.				
5.				
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9.				
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FORM I VOA-TIC 1/87 Rev.

H30

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-1

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002235

Sample wt/vol: 1 (g/mL) G Lab File ID: D2632

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

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	23000	U
106-46-7	1,4-Dichlorobenzene	23000	U
100-51-6	Benzyl alcohol	23000	U
95-50-1	1,2-Dichlorobenzene	23000	U
95-48-7	2-Methylphenol	23000	U
39638-32-9	bis(2-chloroisopropyl)ether	23000	U
106-44-5	4-Methylphenol	23000	U
621-64-7	N-Nitroso-di-n-propylamine	23000	U
67-72-1	Hexachloroethane	23000	U
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
65-85-0	Benzoic Acid	110000	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	23000	U
91-20-3	Naphthalene	27000	
106-47-8	4-Chloroaniline	23000	U
87-68-3	Hexachlorobutadiene	23000	U
59-50-7	4-Chloro-3-methylphenol	23000	U
91-57-6	2-Methylnaphthalene	290000	
77-47-4	Hexachlorocyclopentadiene	23000	U
88-06-2	2,4,6-Trichlorophenol	23000	U
95-95-4	2,4,5-Trichlorophenol	110000	U
91-58-7	2-Chloronaphthalene	23000	U
88-74-4	2-Nitroaniline	110000	U
131-11-3	Dimethylphthalate	23000	U
208-96-8	Acenaphthylene	23000	U
606-20-2	2,6-Dinitrotoluene	23000	U

M White 5-23-90

FORM I SV-1 1/87 Rev.

431

56

94

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL- 1

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002235

Sample wt/vol: 1 (g/mL) G Lab File ID: >D2632

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	110000	U
83-32-9	Acenaphthene	11000	J
51-28-5	2,4-Dinitrophenol	110000	U
100-02-7	4-Nitrophenol	110000	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	12000	J
100-01-6	4-Nitroaniline	110000	U
534-52-1	4,6-Dinitro-2-methylphenol	110000	U
86-30-6	N-Nitrosodiphenylamine	23000	U
101-55-3	4-Bromophenyl-phenylether	23000	U
118-74-1	Hexachlorobenzene	23000	U
87-86-5	Pentachlorophenol	110000	U
85-01-8	Phenanthrene	40000	E
120-12-7	Anthracene	4900	J
84-74-2	Di-n-butylphthalate	23000	U
206-44-0	Fluoranthene	12000	J
129-00-0	Pyrene	21000	J
85-68-7	Butylbenzylphthalate	23000	U
91-94-1	3,3'-Dichlorobenzidine	46000	U
56-55-3	Benzo(a)anthracene	23000	U
218-01-9	Chrysene	23000	U
117-81-7	bis(2-Ethylhexyl)phthalate	14000	J
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	Dibenzo(a,h)anthracene	23000	U
191-24-2	Benzo(g,h,i)perylene	23000	U

M W 5-23-c

H32

57

95

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-1

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002235

Sample wt/vol: 1 (g/mL) G Lab File ID: > 02632

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN C10H14 ISOMER	10.59	37000	J
2.		UNKNOWN C10H12 ISOMER	10.92	67000	J
3.		UNKNOWN C10H14 ISOMER	11.16	72000	J
4.		UNKNOWN C10H14 ISOMER	11.53	35000	J
5.		UNKNOWN	12.39	41000	J
6.		UNKNOWN	12.55	75000	J
7.		UNKNOWN C11H14 ISOMER	12.80	92000	J
8.		UNKNOWN C11H14 ISOMER	13.02	85000	J
9.	90120	NAPHTHALENE,1-METHYL-	13.82	240000	J
10.		UNKNOWN DIMETHYL NAPHTHLENE ISOMER	15.19	360000	J
11.		UNKNOWN DIMETHYL NAPHTHLENE ISOMER	15.40	700000	J
12.		UNKNOWN DIMETHYL NAPHTHLENE ISOMER	15.69	230000	J
13.		UNKNOWN C13H14 ISOMER	16.55	94000	J
14.		UNKNOWN C13H14 ISOMER	16.85	88000	J
15.		UNKNOWN C13H14 ISOMER	17.14	72000	J
16.		UNKNOWN ALKANE	18.97	98000	J
17.		COLUMN_BLEED	24.97	91000	J
18.	849990	HEXANEDIOIC ACID, DICYCLOHEXYL ESTER	26.04	110000	J
19.		COLUMN_BLEED	26.25	100000	J
20.		COLUMN_BLEED	27.44	92000	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

H33

EPA SAMPLE NO.

SOIL1	DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002235

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 12.8 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH Dilution Factor: 5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	690	UD
319-85-7	--BETA-BHC	690	UD
319-86-8	--DELTA-BHC	690	UD
58-89-9	--GAMMA-BHC	690	UD
76-44-8	--HEPTACHLOR	690	UD
309-00-2	--ALDRIN	690	UD
1024-57-3	--HEPTACHLOR EPOXIDE	690	UD
959-98-8	--ENDOSULFAN I	690	UD
60-57-1	--DIELDRIN	1400	UD
72-55-9	--4,4'-DDE	1400	UD
72-20-8	--ENDRIN	1400	UD
33213-65-9	--ENDOSULFAN II	1400	UD
72-54-8	--4,4'-DDD	1400	UD
1031-07-8	--ENDOSULFAN SULFATE	1400	UD
50-29-3	--4,4'-DDT	1400	UD
72-43-5	--METHOXYCHLOR	6900	UD
53494-70-5	--ENDRIN KETONE	1400	UD
5103-71-9	--ALPHA-CHLORDANE	6900	UD
5103-74-2	--GAMMA-CHLORDANE	6900	UD
8001-35-2	--TOXAPHENE	14000	UD
12674-11-2	--AROCLOR-1016	6900	UD
11104-28-2	--AROCLOR-1221	6900	UD
11141-16-5	--AROCLOR-1232	6900	UD
53469-21-9	--AROCLOR-1242	6900	UD
12672-29-6	--AROCLOR-1248	6900	UD
11097-69-1	--AROCLOR-1254	14000	UD
11096-82-5	--AROCLOR-1260	14000	UD

H34

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-1

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ [illegible]

Matrix (soil/water): SOIL Lab Sample ID: 90002235

Level (low/med): LOW Date Received: 04/20/90

% Solids: 87.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7130		*	P
7440-36-0	Antimony	5.4	U	N	F
7440-38-2	Arsenic	1.6	B	N*	F
7440-39-3	Barium	1120		E*	P
7440-41-7	Beryllium	0.67	B		P
7440-43-9	Cadmium	1.3			P
7440-70-2	Calcium	830	B	E*	P
7440-47-3	Chromium	10.6		*	P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	18.0			P
7439-89-6	Iron	10100			P
7439-92-1	Lead	1250		*	P
7439-95-4	Magnesium	1410		*	P
7439-96-5	Manganese	841			P
7439-97-6	Mercury	0.18			CV
7440-02-0	Nickel	6.5	B		P
7440-09-7	Potassium	256	B		A
7782-49-2	Selenium	0.42	B	N	F
7440-22-4	Silver	0.22	U		F
7440-23-5	Sodium	97.1	B		P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	22.7			P
7440-66-6	Zinc	28.6		N	P
	Cyanide	0.29	U		AS

Color Before: BLACK Clarity Before: Texture: FINE

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

135

60

98

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

SOIL-2

Lab Name: TCT ST.LOUIS Contract: 5540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002256

Sample wt/vol: 4 (g/mL) G Lab File ID: >E3349

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 Date Analyzed: 05/03/90

Column: (pack/cap) CAP Dilution Factor: 2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	2900	U
74-83-9	Bromomethane	2900	U
75-01-4	Vinyl Chloride	2900	U
75-00-3	Chloroethane	2900	U
75-09-2	Methylene Chloride	1400	U
67-64-1	Acetone	2900	U
75-15-0	Carbon Disulfide	1400	U
75-35-4	1,1-Dichloroethene	1400	U
75-34-3	1,1-Dichloroethane	1400	U
540-59-0	1,2-Dichloroethene (total)	1400	U
67-66-3	Chloroform	1400	U
107-06-2	1,2-Dichloroethane	1400	U
78-93-3	2-Butanone	2900	U
71-55-6	1,1,1-Trichloroethane	4800	
56-23-5	Carbon Tetrachloride	1400	U
108-05-4	Vinyl Acetate	2900	U
75-27-4	Bromodichloromethane	1400	U
78-87-5	1,2-Dichloropropane	1400	U
10061-01-5	cis-1,3-Dichloropropene	1400	U
79-01-6	Trichloroethene	1400	U
124-48-1	Dibromochloromethane	1400	U
79-00-5	1,1,2-Trichloroethane	1400	U
71-43-2	Benzene	1400	U
10061-02-6	trans-1,3-Dichloropropene	1400	U
75-25-2	Bromoform	1400	U
108-10-1	4-Methyl-2-pentanone	2900	U
591-78-6	2-Hexanone	2900	U
127-18-4	Tetrachloroethene	1400	U
79-34-5	1,1,2,2-Tetrachloroethane	1400	U
108-88-3	Toluene	1400	U
108-90-7	Chlorobenzene	1400	U
100-41-4	Ethylbenzene	330	J
100-42-5	Styrene	3900	
1330-20-7	Xylene (total)	7700	

H 36 61 99

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-2

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002236

Sample wt/vol: 4 (g/mL) G Lab File ID: >E3549

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 Date Analyzed: 05/03/90

Column: CAP Dilution Factor: 2

Number TICs found: 10

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	20.03	45000	J
2.		UNKNOWN	24.75	47000	J
3.		UNKNOWN ALKENYl benzene	25.14	87000	J
4.		UNKNOWN BENZENE ISOMER	25.61	43000	J
5.		UNKNOWN METHYL ETHYL BENZENE	26.30	110000	J
6.		UNKNOWN BENZENE ISOMER	26.85	47000	J
7.		UNKNOWN	27.32	65000	J
8.		UNKNOWN ALKENE	27.70	45000	J
9.		UNKNOWN DIHYDRO,DIMETHYL 1H-INDENE	28.11	45000	J
10.		UNKNOWN ALKENE	28.52	42000	J
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FORM I VOA-TIC 1/87 Rev.

H37

62
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-2

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002236

Sample wt/vol: 1 (g/mL) G Lab File ID: >02633

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

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	23000	U
106-46-7	1,4-Dichlorobenzene	23000	U
100-51-6	Benzyl alcohol	23000	U
95-50-1	1,2-Dichlorobenzene	23000	U
95-48-7	2-Methylphenol	23000	U
39638-32-9	bis(2-chloroisopropyl)ether	23000	U
106-44-5	4-Methylphenol	23000	U
621-64-7	N-Nitroso-di-n-propylamine	23000	U
67-72-1	Hexachloroethane	23000	U
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
65-85-0	Benzoic Acid	110000	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	23000	U
91-20-3	Naphthalene	17000	J
106-47-8	4-Chloroaniline	23000	U
87-68-3	Hexachlorobutadiene	23000	U
59-50-7	4-Chloro-3-methylphenol	23000	U
91-57-6	2-Methylnaphthalene	150000	E
77-47-4	Hexachlorocyclopentadiene	23000	U
88-06-2	2,4,6-Trichlorophenol	23000	U
95-95-4	2,4,5-Trichlorophenol	110000	U
91-58-7	2-Chloronaphthalene	23000	U
88-74-4	2-Nitroaniline	110000	U
131-11-3	Dimethylphthalate	23000	U
208-96-8	Acenaphthylene	23000	U
606-20-2	2,6-Dinitrotoluene	23000	U

mwinter 5-23-90

FORM I SV-1 1/87 Rev

H38

63
101

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-2

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002236

Sample wt/vol: 1 (g/mL) G Lab File ID: >D2633

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	110000	U
83-32-9	Acenaphthene	7900	J
51-28-5	2,4-Dinitrophenol	110000	U
100-02-7	4-Nitrophenol	110000	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	8800	J
100-01-6	4-Nitroaniline	110000	U
534-52-1	4,6-Dinitro-2-methylphenol	110000	U
86-30-6	N-Nitrosodiphenylamine	23000	U
101-55-3	4-Bromophenyl-phenylether	23000	U
118-74-1	Hexachlorobenzene	23000	U
87-86-5	Pentachlorophenol	110000	U
85-01-8	Phenanthrene	19000	J
120-12-7	Anthracene	3200	J
84-74-2	Di-n-butylphthalate	3100	J
206-44-0	Fluoranthene	12000	J
129-00-0	Pyrene	14000	J
85-68-7	Butylbenzylphthalate	23000	U
91-94-1	3,3'-Dichlorobenzidine	46000	U
56-55-3	Benzo(a)anthracene	4900	J
218-01-9	Chrysene	6000	J
117-81-7	bis(2-Ethylhexyl)phthalate	25000	
117-84-0	Di-n-octylphthalate	23000	U
205-99-2	Benzo(b)fluoranthene \ combined	5200	J
207-08-9	Benzo(k)fluoranthene /		
50-32-8	Benzo(a)pyrene	23000	U
193-39-5	Indeno(1,2,3-cd)pyrene	23000	U
53-70-3	Dibenzo(a,h)anthracene	23000	U
191-24-2	Benzo(g,h,i)perylene	23000	U

Small 523

H39

64
102

IF

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-~~1~~2 MW wile 15-23 40

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002236

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2633

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 13 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN C9H12 ISOMER	7.44	76000	J
2.	UNKNOWN C10H12 ISOMER	10.91	100000	J
3.	UNKNOWN	11.02	150000	J
4.	UNKNOWN C10H14 ISOMER	11.16	35000	J
5.	UNKNOWN	11.32	67000	J
6.	UNKNOWN C12H18 ISOMER	12.39	56000	J
7.	UNKNOWN	12.55	87000	J
8.	UNKNOWN C11H14 ISOMER	12.80	98000	J
9.	UNKNOWN C11H14 ISOMER	13.02	90000	J
10. 90120	NAPHTHALENE,1-METHYL-	13.80	210000	J
11.	UNKNOWN C12H12 ISOMER	15.18	270000	J
12.	UNKNOWN C12H12 ISOMER	15.40	320000	J
13.	UNKNOWN C12H12 ISOMER	15.69	160000	J
14.	UNKNOWN C13H14 ISOMER	16.55	69000	J
15.	UNKNOWN C13H14 ISOMER	16.86	74000	J
16.	UNKNOWN C13H14 ISOMER	17.15	61000	J
17.	UNKNOWN C13H14 ISOMER	17.39	80000	J
18.	UNKNOWN ALKANE	18.97	110000	J
19.	COLUMN BLEED	27.47	100000	J
20.	COLUMN BLEED	26.25	100000	J
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FORM I SV-TIC 1987 Rev.

H40

65
103

EPA SAMPLE NO.

SOIL2 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002236

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 13.0 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/11/90

GPC Cleanup:(Y/N) N pH 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	1400	UD
319-85-7	--BETA-BHC	1400	UD
319-86-8	--DELTA-BHC	1400	UD
58-89-9	--GAMMA-BHC	1400	UD
76-44-8	--HEPTACHLOR	1400	UD
309-00-2	--ALDRIN	1400	UD
1024-57-3	--HEPTACHLOR EPOXIDE	1400	UD
959-98-8	--ENDOSULFAN I	1400	UD
60-57-1	--DIELDRIN	2800	UD
72-55-9	--4,4'-DDE	2800	UD
72-20-8	--ENDRIN	2800	UD
33213-65-9	--ENDOSULFAN II	2800	UD
72-54-8	--4,4'-DDD	2800	UD
1031-07-8	--ENDOSULFAN SULFATE	2800	UD
50-29-3	--4,4'-DDT	2800	UD
72-43-5	--METHOXYCHLOR	14000	UD
53494-70-5	--ENDRIN KETONE	2800	UD
5103-71-9	--ALPHA-CHLORDANE	14000	UD
5103-74-2	--GAMMA-CHLORDANE	14000	UD
8001-35-2	--TOXAPHENE	28000	UD
12674-11-2	--AROCLOR-1016	14000	UD
11104-28-2	--AROCLOR-1221	14000	UD
11141-16-5	--AROCLOR-1232	14000	UD
53469-21-9	--AROCLOR-1242	14000	UD
12672-29-6	--AROCLOR-1248	14000	UD
11097-69-1	--AROCLOR-1254	28000	UD
11096-82-5	--AROCLOR-1260	28000	UD

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-2

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~ Field

Matrix (soil/water): SOIL Lab Sample ID: 90002236

Level (low/med): LOW Date Received: 04/20/90

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4330		*	P
7440-36-0	Antimony	5.4	U	N	F
7440-38-2	Arsenic	4.6		N*	F
7440-39-3	Barium	6000		E*	P
7440-41-7	Beryllium	0.89	B		P
7440-43-9	Cadmium	2.5			P
7440-70-2	Calcium	5310		E*	P
7440-47-3	Chromium	49.8		*	P
7440-48-4	Cobalt	12.1			P
7440-50-8	Copper	58.7			P
7439-89-6	Iron	17500			P
7439-92-1	Lead	13500		*	P
7439-95-4	Magnesium	6490	B	*	P
7439-96-5	Manganese	4890			P
7439-97-6	Mercury	0.21			CV
7440-02-0	Nickel	15.8			P
7440-09-7	Potassium	567	B		A
7782-49-2	Selenium	2.1	B	N	F
7440-22-4	Silver	0.23	U		F
7440-23-5	Sodium	234	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	21.6			P
7440-66-6	Zinc	319		N	P
	Cyanide	0.29	U		AS

Color Before: BLACK Clarity Before: Texture: FINE

Color After: BROWN Clarity After: CLEAR Artifacts: YES

Comments:
ARTIFACTS= RED PARTICLES

H42

67

105

VOLATILE ORGANICS ANALYSIS DATA SHEET

SOIL-3

Lab Name: TCT ST.LOUIS Contract: ~~3450~~ 3540 5-27-90

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3760

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 Date Analyzed: 04/29/90

Column: (pack/cap) PACK Dilution Factor: 400

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	670000	U
74-83-9	Bromomethane	670000	U
75-01-4	Vinyl Chloride	670000	U
75-00-3	Chloroethane	670000	U
75-09-2	Methylene Chloride	87000	J
67-64-1	Acetone	210000	J
75-15-0	Carbon Disulfide	330000	U
75-35-4	1,1-Dichloroethene	330000	U
75-34-3	1,1-Dichloroethane	330000	U
540-59-0	1,2-Dichloroethene (total)	330000	U
67-66-3	Chloroform	330000	U
107-06-2	1,2-Dichloroethane	330000	U
78-93-3	2-Butanone	670000	U
71-55-6	1,1,1-Trichloroethane	27,000,000	E
56-23-5	Carbon Tetrachloride	330000	U
108-05-4	Vinyl Acetate	670000	U
75-27-4	Bromodichloromethane	330000	U
78-87-5	1,2-Dichloropropane	330000	U
10061-01-5	cis-1,3-Dichloropropene	330000	U
79-01-6	Trichloroethene	330000	U
124-48-1	Dibromochloromethane	330000	U
79-00-5	1,1,2-Trichloroethane	330000	U
71-43-2	Benzene	330000	U
10061-02-6	trans-1,3-Dichloropropene	330000	U
75-25-2	Bromoform	330000	U
108-10-1	4-Methyl-2-pentanone	670000	U
591-78-6	2-Hexanone	670000	U
127-18-4	Tetrachloroethene	90000	J
79-34-5	1,1,2,2-Tetrachloroethane	330000	U
108-88-3	Toluene	770000	
108-90-7	Chlorobenzene	330000	U
100-41-4	Ethylbenzene	100000	
100-42-5	Styrene	330000	U
1330-20-7	Xylene (total)	9800000	

BAB 5-24-9

FORM I VOA 1/87 Rev

H43

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-3 ~~DFAE~~
BJB 5-23-90

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3760

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 Date Analyzed: 04/29/90

Column: PACK Dilution Factor: 400

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

Number TICs found: 23 x Davis 5/23/90

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	BENZENE ISOMER	30.96	17000000	J
2.	ETHYL-METHYL-BENZENE ISOMER	33.75	54000000	J
3. 103651	~~UNKNOWN~~ propylbenzene	34.90	15000000	J
4.	M. Writer			
5.	5-27-90			
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FORM I VOA-TIC 1/87 Rev.

H44

69
107

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3 DL

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3761

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 Date Analyzed: 04/29/90

Column: (pack/cap) PACK Dilution Factor: 1000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	1700000	U
74-83-9	Bromomethane	1700000	U
75-01-4	Vinyl Chloride	1700000	U
75-00-3	Chloroethane	1700000	U
75-09-2	Methylene Chloride	220000	J
67-64-1	Acetone	490000	J
75-15-0	Carbon Disulfide	830000	U
75-35-4	1,1-Dichloroethene	830000	U
75-34-3	1,1-Dichloroethane	830000	U
540-59-0	1,2-Dichloroethene (total)	830000	U
67-66-3	Chloroform	830000	U
107-06-2	1,2-Dichloroethane	830000	U
78-93-3	2-Butanone	1700000	U
71-55-6	1,1,1-Trichloroethane	23000000	
56-23-5	Carbon Tetrachloride	830000	U
108-05-4	Vinyl Acetate	1700000	U
75-27-4	Bromodichloromethane	830000	U
78-87-5	1,2-Dichloropropane	830000	U
10061-01-5	cis-1,3-Dichloropropene	830000	U
79-01-6	Trichloroethene	830000	U
124-48-1	Dibromochloromethane	830000	U
79-00-5	1,1,2-Trichloroethane	830000	U
71-43-2	Benzene	830000	U
10061-02-6	trans-1,3-Dichloropropene	830000	U
75-25-2	Bromoform	830000	U
108-10-1	4-Methyl-2-pentanone	1700000	U
591-78-6	2-Hexanone	1700000	U
127-18-4	Tetrachloroethene	830000	U
79-34-5	1,1,2,2-Tetrachloroethane	830000	U
108-88-3	Toluene	780000	J
108-90-7	Chlorobenzene	830000	U
100-41-4	Ethylbenzene	710000	
100-42-5	Styrene	830000	U
1330-20-7	Xylene (total)	9400000	

VJB 5-23-90

H 45

70

108

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-3 DL

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 54 (g/mL) G Lab File ID: >B3761

Level: (low/med) ~~LOW~~ MED J. Hamm 5/21/90 Date Received: 04/20/90

% Moisture: not dec. 25 Date Analyzed: 04/29/90

Column: PACK Dilution Factor: x 1000

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG J. Hamm 5/21/90

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	C9H12 ALKYL SUBSTITUTED BENZENE	24.66	8100000	J
2. 103651	BENZENE,PROPYL-	31.00	8600000	J
3.	ETHYL-METHYL-BENZENE ISOMER	33.79	3100000	J
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FORM I VOA-TIC 1/87 Rev.

146

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/mL) G Lab File ID: >D2634

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
108-95-2	Phenol	26000	U
111-44-4	bis(-2-Chloroethyl)ether	26000	U
95-57-8	2-Chlorophenol	26000	U
541-73-1	1,3-Dichlorobenzene	26000	U
106-46-7	1,4-Dichlorobenzene	26000	U
100-51-6	Benzyl alcohol	26000	U
95-50-1	1,2-Dichlorobenzene	26000	U
95-48-7	2-Methylphenol	26000	U
39638-32-9	bis(2-chloroisopropyl)ether	26000	U
106-44-5	4-Methylphenol	26000	U
621-64-7	N-Nitroso-di-n-propylamine	26000	U
67-72-1	Hexachloroethane	26000	U
98-95-3	Nitrobenzene	26000	U
78-59-1	Isophorone	26000	U
88-75-5	2-Nitrophenol	26000	U
105-67-9	2,4-Dimethylphenol	26000	U
65-85-0	Benzoic Acid	130000	U
111-91-1	bis(2-Chloroethoxy)methane	26000	U
120-83-2	2,4-Dichlorophenol	26000	U
120-82-1	1,2,4-Trichlorobenzene	26000	U
91-20-3	Naphthalene	810000	E
106-47-8	4-Chloroaniline	26000	U
87-68-3	Hexachlorobutadiene	26000	U
59-50-7	4-Chloro-3-methylphenol	26000	U
91-57-6	2-Methylnaphthalene	1700000	E
77-47-4	Hexachlorocyclopentadiene	26000	U
88-06-2	2,4,6-Trichlorophenol	26000	U
95-95-4	2,4,5-Trichlorophenol	130000	U
91-58-7	2-Chloronaphthalene	26000	U
88-74-4	2-Nitroaniline	130000	U
131-11-3	Dimethylphthalate	26000	U
208-96-8	Acenaphthylene	26000	U
606-20-2	2,6-Dinitrotoluene	26000	U

H 47 110

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/mL) G Lab File ID: >D2634

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	130000	U
83-32-9	Acenaphthene	20000	J
51-28-5	2,4-Dinitrophenol	130000	U
100-02-7	4-Nitrophenol	130000	U
132-64-9	Dibenzofuran	26000	U
121-14-2	2,4-Dinitrotoluene	26000	U
84-66-2	Diethylphthalate	26000	U
7005-72-3	4-Chlorophenyl-phenylether	26000	U
86-73-7	Fluorene	21000	J
100-01-6	4-Nitroaniline	130000	U
534-52-1	4,6-Dinitro-2-methylphenol	130000	U
86-30-6	N-Nitrosodiphenylamine	26000	U
101-55-3	4-Bromophenyl-phenylether	26000	U
118-74-1	Hexachlorobenzene	26000	U
87-86-5	Pentachlorophenol	130000	U
85-01-8	Phenanthrene	34000	
120-12-7	Anthracene	11000	J
84-74-2	Di-n-butylphthalate	2900	J
206-44-0	Fluoranthene	8900	J
129-00-0	Pyrene	14000	J
85-68-7	Butylbenzylphthalate	26000	U
91-94-1	3,3'-Dichlorobenzidine	53000	U
56-55-3	Benzo(a)anthracene	9900	J
218-01-9	Chrysene	15600	J
117-81-7	bis(2-Ethylhexyl)phthalate	12000	J
117-84-0	Di-n-octylphthalate	26000	U
205-99-2	Benzo(b)fluoranthene \	5400	J
207-08-9	Benzo(k)fluoranthene /		
50-32-8	Benzo(a)pyrene	26000	U
193-39-5	Indeno(1,2,3-cd)pyrene	26000	U
53-70-3	Dibenzo(a,h)anthracene	26000	U
191-24-2	Benzo(g,h,i)perylene	26000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-3

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2634

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 100414	BENZENE, ETHYL-	5.14	140000	J
2.	UNKNOWN ALKANE	6.10	120000	J
3.	UNKNOWN C9H12 ISOMER	6.70	920000	J
4.	UNKNOWN	7.33	470000	J
5.	UNKNOWN	7.78	1100000	J
6.	UNKNOWN	8.56	1200000	J
7.	UNKNOWN C9H12 ISOMER	8.99	460000	J
8.	UNKNOWN C9H10 ISOMER	9.17	140000	J
9.	UNKNOWN C10H14 ISOMER	9.48	75000	J
10.	UNKNOWN	9.56	320000	J
11.	UNKNOWN	9.64	250000	J
12.	UNKNOWN C10H14 ISOMER	10.68	37000	J
13.	UNKNOWN C10H12 ISOMER	11.22	68000	J
14.	UNKNOWN	11.44	11000	J
15.	UNKNOWN C11H16 ISOMER	12.02	34000	J
16.	UNKNOWN C11H16 ISOMER	12.61	34000	J
17.	UNKNOWN C11H14 ISOMER	12.85	35000	J
18. 90120	NAPHTHALENE, 1-METHYL-	13.90	110000	J
19.	UNKNOWN C12H12 ISOMER	15.23	180000	J
20.	UNKNOWN C12H12 ISOMER	15.45	300000	J
21.				
22.				
23.				
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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3 RE UL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/ml) G Lab File ID: >02671

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 10

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	
100-51-6	Benzyl alcohol	260000	U	
95-50-1	1,2-Dichlorobenzene	260000	U	
95-48-7	2-Methylphenol	260000	U	
39638-32-9	bis(2-chloroisopropyl)ether	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	
65-85-0	Benzoic Acid	1300000	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	1500000	E	not above calibration range
106-47-8	4-Chloroaniline	260000	U	
87-68-3	Hexachlorobutadiene	260000	U	
59-50-7	4-Chloro-3-methylphenol	260000	U	
91-57-6	2-Methylnaphthalene	3400000	E	
77-47-4	Hexachlorocyclopentadiene	260000	U	
88-06-2	2,4,6-Trichlorophenol	260000	U	
95-95-4	2,4,5-Trichlorophenol	1300000	U	
91-58-7	2-Chloronaphthalene	260000	U	
88-74-4	2-Nitroaniline	1300000	U	
131-11-3	Dimethylphthalate	260000	U	
208-96-8	Acenaphthylene	260000	U	
606-20-2	2,6-Dinitrotoluene	260000	U	

M Winter 5-25-9

H50 75 113

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2671

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1300000	U
83-32-9	Acenaphthene	21000	J
51-28-5	2,4-Dinitrophenol	1300000	U
100-02-7	4-Nitrophenol	1300000	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	29000	J
100-01-6	4-Nitroaniline	1300000	U
534-52-1	4,6-Dinitro-2-methylphenol	1300000	U
86-30-6	N-Nitrosodiphenylamine	260000	U
101-55-3	4-Bromophenyl-phenylether	260000	U
118-74-1	Hexachlorobenzene	260000	U
87-86-5	Pentachlorophenol	1300000	U
85-01-8	Phenanthrene	44000	J
120-12-7	Anthracene	260000	U
84-74-2	Di-n-butylphthalate	260000	U
206-44-0	Fluoranthene	260000	U
129-00-0	Pyrene	25000	J
85-68-7	Butylbenzylphthalate	260000	U
91-94-1	3,3'-Dichlorobenzidine	530000	U
56-55-3	Benzo(a)anthracene	260000	U
218-01-9	Chrysene	260000	U
117-81-7	bis(2-Ethylhexyl)phthalate	53000	J
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	Dibenzo(a,h)anthracene	260000	U
191-24-2	Benzo(g,h,i)perylene	260000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-3 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2671

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 25 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108383	BENZENE,1,3-DIMETHYL	4.64	2200000	J
2. 98828	BENZENE,(1-METHYLETHYL)-	5.99	2500000	J
3. 103651	BENZENE,PROPYL-	6.66	5300000	J
4. 526738	BENZENE,1,2,3-TRIMETHYL	7.26	5300000	J
5. 611143	BENZENE,1-ETHYL-2-METHYL-	7.26	4000000	J
6.	DIETHYL BENZENE ISOMER	8.67	3200000	J
7. 135013	BENZENE,1,2-DIETHYL	8.77	1200000	J
8.	1-METHYL(1-METHYLETHYL)	8.83	1400000	J
	BENZENE ISOMER			
9.	TETRAMETHYL BENZENE ISOMER	9.96	560000	J
10.	UNKNOWN	10.71	2700000	J
11.	BENZENE ISOMER	11.90	530000	J
12.	DIHYDRO-DIMETHYL-1H-INDENE	12.15	530000	J
	ISOMER			
13.	BENZENE,1,4-DIMETHYL-2-	12.66	900000	J
	(1-METHYLETHYL)-			
14. 90120	NAPHTHALENE,1-METHYL-	13.13	2400000	J
15.	DIMETHYL NAPHTHALENE ISOMER	14.50	960000	J
16.	DIMETHYL NAPHTHALENE ISOMER	14.72	1800000	J
17.	HEXANEDIOIC ACID,DIOCTYL	25.35	530000	J
	ESTER			
18.	UNKNOWN	25.58	610000	J
19.	UNKNOWN	26.76	720000	J
20.	UNKNOWN	28.95	560000	J
21.				
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H52

EPA SAMPLE NO.

SOIL3	DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002237

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 24.9 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 5 Dilution Factor: 5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	800	UD
319-85-7	--BETA-BHC	800	UD
319-86-8	--DELTA-BHC	800	UD
58-89-9	--GAMMA-BHC	800	UD
76-44-8	--HEPTACHLOR	800	UD
309-00-2	--ALDRIN	800	UD
1024-57-3	--HEPTACHLOR EPOXIDE	800	UD
959-98-8	--ENDOSULFAN I	800	UD
60-57-1	--DIELDRIN	1600	UD
72-55-9	--4,4'-DDE	1600	UD
72-20-8	--ENDRIN	1600	UD
33213-65-9	--ENDOSULFAN II	1600	UD
72-54-8	--4,4'-DDD	1600	UD
1031-07-8	--ENDOSULFAN SULFATE	1600	UD
50-29-3	--4,4'-DDT	1600	UD
72-43-5	--METHOXYCHLOR	8000	UD
53494-70-5	--ENDRIN KETONE	1600	UD
5103-71-9	--ALPHA-CHLORDANE	8000	UD
5103-74-2	--GAMMA-CHLORDANE	8000	UD
8001-35-2	--TOXAPHENE	16000	UD
12674-11-2	--AROCLOR-1016	8000	UD
11104-28-2	--AROCLOR-1221	8000	UD
11141-16-5	--AROCLOR-1232	8000	UD
53469-21-9	--AROCLOR-1242	8000	UD
12672-29-6	--AROCLOR-1248	8000	UD
11097-69-1	--AROCLOR-1254	16000	UD
11096-82-5	--AROCLOR-1260	16000	UD

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-3

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~ Field

Matrix (soil/water): SOIL Lab Sample ID: 90002237

Level (low/med): LOW Date Received: 04/20/90

% Solids: 75.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	603		*	P
7440-36-0	Antimony	6.0	U	N	F
7440-38-2	Arsenic	2.7		N*	F
7440-39-3	Barium	5500		E*	P
7440-41-7	Beryllium	0.50	B		P
7440-43-9	Cadmium	0.75	U		P
7440-70-2	Calcium	1160	B	E*	P
7440-47-3	Chromium	17.1		*	P
7440-48-4	Cobalt	2.5	U		P
7440-50-8	Copper	18.3			P
7439-89-6	Iron	10100			P
7439-92-1	Lead	809		*	P
7439-95-4	Magnesium	425	B	*	P
7439-96-5	Manganese	56.0			P
7439-97-6	Mercury	0.27			CV
7440-02-0	Nickel	5.0	U		P
7440-09-7	Potassium	427	B		A
7782-49-2	Selenium	0.27	U	N	F
7440-22-4	Silver	0.27	U		F
7440-23-5	Sodium	147	B		P
7440-28-0	Thallium	0.27	U		F
7440-62-2	Vanadium	3.5	B		P
7440-66-6	Zinc	42.5		N	P
	Cyanide	3.7			AS

Color Before: DK.BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 4 (g/mL) G Lab File ID: B3763

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 24 Date Analyzed: 04/29/90

Column: (pack/cap) PACK Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	16000	U
74-83-9	Bromomethane	16000	U
75-01-4	Vinyl Chloride	16000	U
75-00-3	Chloroethane	16000	U
75-09-2	Methylene Chloride	2200	J
67-64-1	Acetone	6500	J
75-15-0	Carbon Disulfide	8200	U
75-35-4	1,1-Dichloroethene	8200	U
75-34-3	1,1-Dichloroethane	8200	U
540-59-0	1,2-Dichloroethene (total)	8200	U
67-66-3	Chloroform	8200	U
107-06-2	1,2-Dichloroethane	8200	U
78-93-3	2-Butanone	16000	U
71-55-6	1,1,1-Trichloroethane	2600	J
56-23-5	Carbon Tetrachloride	8200	U
108-05-4	Vinyl Acetate	16000	U
75-27-4	Bromodichloromethane	8200	U
78-87-5	1,2-Dichloropropane	8200	U
10061-01-5	cis-1,3-Dichloropropene	8200	U
79-01-6	Trichloroethene	8200	U
124-48-1	Dibromochloromethane	8200	U
79-00-5	1,1,2-Trichloroethane	8200	U
71-43-2	Benzene	8200	U
10061-02-6	trans-1,3-Dichloropropene	8200	U
75-25-2	Bromoform	8200	U
108-10-1	4-Methyl-2-pentanone	16000	U
591-78-6	2-Hexanone	16000	U
127-18-4	Tetrachloroethene	8200	U
79-34-5	1,1,2,2-Tetrachloroethane	8200	U
108-88-3	Toluene	82000	
108-90-7	Chlorobenzene	8200	U
100-41-4	Ethylbenzene	28000	
100-42-5	Styrene	8200	U
1330-20-7	Xylene (total)	240000	

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3763

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 24 Date Analyzed: 04/29/90

Column: PACK Dilution Factor: 10

Number TICs found: 5

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		ETHYL METHYL CYCLOHEXANE ISOMER	26.28	51000	J
2.		C9H18 ISOMER	27.05	72000	J
3.	13427435	1-HEXENE,3,3,6-TRIMETHYL	30.57	220000	J
4.		UNKNOWN	32.26	190000	J
5.		C9H12 ISOMER	33.72	200000	J
6.					
7.					
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FORM I VOA-TIC 1/87 Rev.

H56

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2662

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 24 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	26000	U
111-44-4	bis(-2-Chloroethyl)ether	26000	U
95-57-8	2-Chlorophenol	26000	U
541-73-1	1,3-Dichlorobenzene	26000	U
106-46-7	1,4-Dichlorobenzene	26000	U
100-51-6	Benzyl alcohol	26000	U
95-50-1	1,2-Dichlorobenzene	26000	U
95-48-7	2-Methylphenol	26000	U
39638-32-9	bis(2-chloroisopropyl)ether	26000	U
106-44-5	4-Methylphenol	26000	U
621-64-7	N-Nitroso-di-n-propylamine	26000	U
67-72-1	Hexachloroethane	26000	U
98-95-3	Nitrobenzene	26000	U
78-59-1	Isophorone	26000	U
88-75-5	2-Nitrophenol	26000	U
105-67-9	2,4-Dimethylphenol	26000	U
65-85-0	Benzoic Acid	130000	U
111-91-1	bis(2-Chloroethoxy)methane	26000	U
120-83-2	2,4-Dichlorophenol	26000	U
120-82-1	1,2,4-Trichlorobenzene	26000	U
91-20-3	Naphthalene	13000	J
106-47-8	4-Chloroaniline	26000	U
87-68-3	Hexachlorobutadiene	26000	U
59-50-7	4-Chloro-3-methylphenol	26000	U
91-57-6	2-Methylnaphthalene	11000	J
77-47-4	Hexachlorocyclopentadiene	26000	U
88-06-2	2,4,6-Trichlorophenol	26000	U
95-95-4	2,4,5-Trichlorophenol	130000	U
91-58-7	2-Chloronaphthalene	26000	U
88-74-4	2-Nitroaniline	130000	U
131-11-3	Dimethylphthalate	26000	U
208-96-8	Acenaphthylene	26000	U
606-20-2	2,6-Dinitrotoluene	26000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2662

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 24 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	130000	U
83-32-9	Acenaphthene	26000	U
51-28-5	2,4-Dinitrophenol	130000	U
100-02-7	4-Nitrophenol	130000	U
132-64-9	Dibenzofuran	26000	U
121-14-2	2,4-Dinitrotoluene	26000	U
84-66-2	Diethylphthalate	26000	U
7005-72-3	4-Chlorophenyl-phenylether	26000	U
86-73-7	Fluorene	26000	U
100-01-6	4-Nitroaniline	130000	U
534-52-1	4,6-Dinitro-2-methylphenol	130000	U
86-30-6	N-Nitrosodiphenylamine	26000	U
101-55-3	4-Bromophenyl-phenylether	26000	U
118-74-1	Hexachlorobenzene	26000	U
87-86-5	Pentachlorophenol	130000	U
85-01-8	Phenanthrene	26000	U
120-12-7	Anthracene	26000	U
84-74-2	Di-n-butylphthalate	17000	J
206-44-0	Fluoranthene	26000	U
129-00-0	Pyrene	26000	U
85-68-7	Butylbenzylphthalate	4400	J
91-94-1	3,3'-Dichlorobenzidine	52000	U
56-55-3	Benzo(a)anthracene	26000	U
218-01-9	Chrysene	26000	U
117-81-7	bis(2-Ethylhexyl)phthalate	47000	
117-84-0	Di-n-octylphthalate	26000	U
205-99-2	Benzo(b)fluoranthene	26000	U
207-08-9	Benzo(k)fluoranthene	26000	U
50-32-8	Benzo(a)pyrene	26000	U
193-39-5	Indeno(1,2,3-cd)pyrene	26000	U
53-70-3	Dibenzo(a,h)anthracene	26000	U
191-24-2	Benzo(g,h,i)perylene	26000	U

Not cur. Nam. [illegible] 5-24-90

H58 83 121

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.:00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2662

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 24 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.08	62000	J
2.	UNKNOWN ALKANE	6.47	87000	J
3.	UNKNOWN ALKANE	6.63	75000	J
4.	UNKNOWN ALKANE	6.90	120000	J
5.	UNKNOWN ALKANE	7.10	130000	J
6.	UNKNOWN ALKANE	7.16	65000	J
7.	UNKNOWN ALKANE	7.30	91000	J
8.	UNKNOWN C9H12 ISOMER	8.33	110000	J
9.	UNKNOWN	8.39	170000	J
10.	UNKNOWN	8.53	130000	J
11.	UNKNOWN ALKANE	8.70	74000	J
12.	UNKNOWN C10H14 ISOMER	8.92	72000	J
13.	UNKNOWN	8.98	79000	J
14.	UNKNOWN C10H14 ISOMER	9.04	74000	J
15.	UNKNOWN ALKANE	9.19	98000	J
16.	UNKNOWN ALKANE	9.31	48000	J
17.	UNKNOWN ALKANE	9.86	300000	J
18.	UNKNOWN ALKANE	10.15	59000	J
19.	UNKNOWN C10H14 ISOMER	10.76	71000	J
20.	UNKNOWN	10.99	570000	J
21.				
22.				
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EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET | SOIL4 DL |
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK 4

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 24.1 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	790	UDX
319-85-7	--BETA-BHC	790	UDX
319-86-8	--DELTA-BHC	790	UDX
58-89-9	--GAMMA-BHC	790	UDX
76-44-8	--HEPTACHLOR	790	UDX
309-00-2	--ALDRIN	790	UDX
1024-57-3	--HEPTACHLOR EPOXIDE	790	UDX
959-98-8	--ENDOSULFAN I	790	UDX
60-57-1	--DIELDRIN	1600	UDX
72-55-9	--4,4'-DDE	1600	UDX
72-20-8	--ENDRIN	1600	UDX
33213-65-9	--ENDOSULFAN II	1600	UDX
72-54-8	--4,4'-DDD	1600	UDX
1031-07-8	--ENDOSULFAN SULFATE	1600	UDX
50-29-3	--4,4'-DDT	1600	UDX
72-43-5	--METHOXYCHLOR	7900	UDX
53494-70-5	--ENDRIN KETONE	1600	UDX
5103-71-9	--ALPHA-CHLORDANE	7900	UDX
5103-74-2	--GAMMA-CHLORDANE	7900	UDX
8001-35-2	--TOXAPHENE	16000	UDX
12674-11-2	--AROCLOR-1016	7900	UDX
11104-28-2	--AROCLOR-1221	7900	UDX
11141-16-5	--AROCLOR-1232	7900	UDX
53469-21-9	--AROCLOR-1242	7900	UDX
12672-29-6	--AROCLOR-1248	7900	UDX
11097-69-1	--AROCLOR-1254	16000	UDX
11096-82-5	--AROCLOR-1260	16000	UDX

FORM 1 PEST 1/87 Rev.

X- see form 1D for Dil 1:100 for DL's + results

H60

85
123

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

SOIL4 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 24.1 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	16000	UD
319-85-7	--BETA-BHC	16000	UD
319-86-8	--DELTA-BHC	16000	UD
58-89-9	--GAMMA-BHC	24000	UD
76-44-8	--HEPTACHLOR	16000	UD
309-00-2	--ALDRIN	16000	UD
1024-57-3	--HEPTACHLOR EPOXIDE	16000	UD
959-98-8	--ENDOSULFAN I	16000	UD Y
60-57-1	--DIELDRIN	32000	UD
72-55-9	--4,4'-DDE	32000	UD
72-20-8	--ENDRIN	32000	UD
33213-65-9	--ENDOSULFAN II	32000	UD
72-54-8	--4,4'-DDD	32000	UD
1031-07-8	--ENDOSULFAN SULFATE	32000	UD
50-29-3	--4,4'-DDT	32000	UD
72-43-5	--METHOXYCHLOR	160000	UD
53494-70-5	--ENDRIN KETONE	32000	UD
5103-71-9	--ALPHA-CHLORDANE	160000	UD
5103-74-2	--GAMMA-CHLORDANE	160000	UD
8001-35-2	--TOXAPHENE	320000	UD
12674-11-2	--AROCLOR-1016	160000	UD
11104-28-2	--AROCLOR-1221	160000	UD
11141-16-5	--AROCLOR-1232	160000	UD
53469-21-9	--AROCLOR-1242	160000	UD
12672-29-6	--AROCLOR-1248	160000	UD
11097-69-1	--AROCLOR-1254	320000	UD
11096-82-5	--AROCLOR-1260	320000	UD

FORM 1 PEST 1/87 Rev.

Y- see Form 1 for Dil 1:500 for actual result

H61

86

124

EPA SAMPLE NO.

SOIL4 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002238

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 24.1 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/11/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	79000	UD
319-85-7	--BETA-BHC	79000	UD
319-86-8	--DELTA-BHC	79000	UD
58-89-9	--GAMMA-BHC	79000	UD
76-44-8	--HEPTACHLOR	79000	UD
309-00-2	--ALDRIN	79000	UD
1024-57-3	--HEPTACHLOR EPOXIDE	79000	UD
959-98-8	--ENDOSULFAN I	190000	UD
60-57-1	--DIELDRIN	160000	UD
72-55-9	--4,4'-DDE	160000	UD
72-20-8	--ENDRIN	160000	UD
33213-65-9	--ENDOSULFAN II	160000	UD
72-54-8	--4,4'-DDD	160000	UD
1031-07-8	--ENDOSULFAN SULFATE	160000	UD
50-29-3	--4,4'-DDT	160000	UD
72-43-5	--METHOXYCHLOR	790000	UD
53494-70-5	--ENDRIN KETONE	160000	UD
5103-71-9	--ALPHA-CHLORDANE	790000	UD
5103-74-2	--GAMMA-CHLORDANE	790000	UD
8001-35-2	--TOXAPHENE	1600000	UD
12674-11-2	--AROCLOR-1016	790000	UD
11104-28-2	--AROCLOR-1221	790000	UD
11141-16-5	--AROCLOR-1232	790000	UD
53469-21-9	--AROCLOR-1242	790000	UD
12672-29-6	--AROCLOR-1248	790000	UD
11097-69-1	--AROCLOR-1254	1600000	UD
11096-82-5	--AROCLOR-1260	1600000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-4

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ Fyl C

Matrix (soil/water): SOIL Lab Sample ID: 90002238

Level (low/med): LOW Date Received: 04/20/90

% Solids: 75.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	527		*	P
7440-36-0	Antimony	6.2	U	N	F
7440-38-2	Arsenic	2.7		N*	F
7440-39-3	Barium	121		E*	P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	1.0	B		P
7440-70-2	Calcium	452	B	E*	P
7440-47-3	Chromium	2.6	U	*	P
7440-48-4	Cobalt	2.6	U		P
7440-50-8	Copper	4.9	B		P
7439-89-6	Iron	7720			P
7439-92-1	Lead	35.1			F
7439-95-4	Magnesium	287	B	*	P
7439-96-5	Manganese	33.8			P
7439-97-6	Mercury	0.18			CV
7440-02-0	Nickel	5.2	U		P
7440-09-7	Potassium	287	B		A
7782-49-2	Selenium	0.28	B	N	F
7440-22-4	Silver	0.24	U	W	F
7440-23-5	Sodium	137	B		P
7440-28-0	Thallium	0.24	U		F
7440-62-2	Vanadium	4.1	B		P
7440-66-6	Zinc	6.2		N	P
	Cyanide	0.33	U		AS

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

FORM I IN 7/88

H63

88

126

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-5

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002259

Sample wt/vol: 4 (g/mL) G Lab File ID: >E3347

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 17 Date Analyzed: 05/03/90

Column: (pack/cap) CAP Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	1500	U
74-83-9	Bromomethane	1500	U
75-01-4	Vinyl Chloride	1500	U
75-00-3	Chloroethane	1500	U
75-09-2	Methylene Chloride	290	J
67-64-1	Acetone	1500	U
75-15-0	Carbon Disulfide	380	J
75-35-4	1,1-Dichloroethene	680	J
75-34-3	1,1-Dichloroethane	310	J
540-59-0	1,2-Dichloroethene (total)	580	J
67-66-3	Chloroform	350	J
107-06-2	1,2-Dichloroethane	750	U
78-93-3	2-Butanone	1500	U
71-55-6	1,1,1-Trichloroethane	750	U
56-23-5	Carbon Tetrachloride	470	J
108-05-4	Vinyl Acetate	1500	U
75-27-4	Bromodichloromethane	750	U
78-87-5	1,2-Dichloropropane	750	U
10061-01-5	cis-1,3-Dichloropropene	750	U
79-01-6	Trichloroethene	740	J
124-48-1	Dibromochloromethane	750	U
79-00-5	1,1,2-Trichloroethane	750	U
71-43-2	Benzene	510	J
10061-02-6	trans-1,3-Dichloropropene	750	U
75-25-2	Bromoform	750	U
108-10-1	4-Methyl-2-pentanone	1500	U
591-78-6	2-Hexanone	1500	U
127-18-4	Tetrachloroethene	760	
79-34-5	1,1,2,2-Tetrachloroethane	750	U
108-88-3	Toluene	750	
108-90-7	Chlorobenzene	480	J
100-41-4	Ethylbenzene	1600	
100-42-5	Styrene	750	U
1330-20-7	Xylene (total)	11000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL 5

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: 4 (g/mL) G Lab File ID: >E3347

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 17 Date Analyzed: 05/03/90

Column: CAP Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 52896909	HEPTANE, 3-ETHYL-5-METHYL-	17.98	17000	J
2. 15869939	OCTANE,3,5-DIMETHYL-	18.92	34000	J
3.	UNKNOWN	19.15	12000	J
4.	UNKNOWN CYCLOALKANE	19.70	19000	J
5.	UNKNOWN ALKANE	20.04	98000	J
6.	BENZENE,1-ETHYL-3-METHYL-	20.63	23000	J
7. 2884062	NONANE,2,3-DIMETHYL-	20.72	22000	J
8.	UNKNOWN	21.10	17000	J
9.	UNKNOWN	21.92	16000	J
10. 13151343	DECANE,3-METHYL-	22.12	17000	J
11. 17302328	NONANE,3,7-DIMETHYL-	22.94	88000	J
12. 4292926	CYCLOHEXANE,PENTYL	24.04	12000	J
13.	UNKNOWN	24.73	16000	J
14. 767588	1H-INDENE,2,3-DIHYDRO-1-	25.14	17000	J
	METHYL			
15.	UNKNOWN	25.62	21000	J
16	C11H16 ISOMER	26.28	18000	J
17.	C12H18 ISOMER	26.86	11000	J
18.	C11H16 ISOMER	27.31	13000	J
19.	METHYL NAPHTHALENE ISOMER	29.33	27000	J
20.	UNKNOWN	29.74	15000	J
21.				
22.				
23.				
24.				
25.				

FORM I VOA-TIC 1/87 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-5

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2648

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 17 dec. Date Extracted: 04/29/90

Extraction: (Sept/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

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

CAS NO.	COMPOUND	ug/Kg	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
39638-32-9	bis(2-chloroisopropyl)ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	1200	
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	6600	
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

M Winter 5-24-90

H66 91

129

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-5

Lab Name: TCT-ST.LUUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLAN

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2648

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 17 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	250	J
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	610	
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	1800	
120-12-7	Anthracene	400	U
84-74-2	Di-n-butylphthalate	440	
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	1500	
85-68-7	Butylbenzylphthalate	390	J
91-94-1	3,3'-Dichlorobenzidine	810	U
56-55-3	Benzo(a)anthracene	520	
218-01-9	Chrysene	690	
117-81-7	bis(2-Ethylhexyl)phthalate	5000	
117-84-0	Di-n-octylphthalate	200	J
205-99-2	Benzo(b)fluoranthene > combined	440	
207-08-9	Benzo(k)fluoranthene	~~400~~	~~U~~
50-32-8	Benzo(a)pyrene	350	J
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	280	J

5-22-90

H67 9

130

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-5

Lab Name: ~~ENVIRODYNE ENGINEERS~~ TCT - St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: .30 (g/mL) G Lab File ID: > D2648

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 17 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.53	2000	J
2.		UNKNOWN C9H12 ISOMER	7.31	3200	J
3.		UNKNOWN ALKANE	8.15	1700	J
4.		UNKNOWN ALKANE	10.09	2500	J
5.		UNKNOWN	11.07	720	J
6.		UNKNOWN	11.16	1000	J
7.		UNKNOWN ALKANE	12.02	640	J
8.		UNKNOWN	12.41	470	J
9.		UNKNOWN C10H14 ISOMER	12.63	550	J
10.		UNKNOWN C11H14 ISOMER	12.86	590	J
11.	90120	NAPHTHALENE, 1-METHYL-	13.64	1100	J
12.		UNKNOWN	14.85	3800	J
13.		UNKNOWN C12H12 ISOMER	15.03	5900	J
14.		UNKNOWN C12H12 ISOMER	15.26	11000	J
15.		UNKNOWN C12H12 ISOMER	15.52	4200	J
16.		UNKNOWN C13H14 ISOMER	16.69	3000	J
17.		UNKNOWN C13H14 ISOMER	17.23	2400	J
18.		UNKNOWN	17.64	2300	J
19.		UNKNOWN	18.75	2300	J
20.		UNKNOWN	18.81	2400	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

FORM I SV-TIC 1/87 Rev.

H68 93

EPA SAMPLE NO.

SOILS DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 17.2 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	97	UDx
319-85-7	--BETA-BHC	97	UDx
319-86-8	--DELTA-BHC	97	UDx
58-89-9	--GAMMA-BHC	97	UDx
76-44-8	--HEPTACHLOR	97	UDx
309-00-2	--ALDRIN	97	UDx
1024-57-3	--HEPTACHLOR EPOXIDE	97	UDx
959-98-8	--ENDOSULFAN I	97	UDx
60-57-1	--DIELDRIN	190	UDx
72-55-9	--4,4'-DDE	190	UDx
72-20-8	--ENDRIN	190	UDx
33213-65-9	--ENDOSULFAN II	190	UDx
72-54-8	--4,4'-DDD	190	UDx
1031-07-8	--ENDOSULFAN SULFATE	190	UDx
50-29-3	--4,4'-DDT	190	UDx
72-43-5	--METHOXYCHLOR	970	UD
53494-70-5	--ENDRIN KETONE	190	UD
5103-71-9	--ALPHA-CHLORDANE	970	UDx
5103-74-2	--GAMMA-CHLORDANE	970	UDx
8001-35-2	--TOXAPHENE	1900	UDx
12674-11-2	--AROCLOR-1016	970	UDx
11104-28-2	--AROCLOR-1221	970	UDx
11141-16-5	--AROCLOR-1232	970	UDx
53469-21-9	--AROCLOR-1242	970	UDx
12672-29-6	--AROCLOR-1248	970	UDx
11097-69-1	--AROCLOR-1254	1900	UDx
11096-82-5	--AROCLOR-1260	1900	UD

FORM 1 PEST 1/87 Rev.

X - see form 1 for Dil 1:100 for actual DL's

H69 94

132

EPA SAMPLE NO.

SOIL5 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002239

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 17.2 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	970	UD
319-85-7	--BETA-BHC	970	UD
319-86-8	--DELTA-BHC	970	UD
58-89-9	--GAMMA-BHC	970	UD
76-44-8	--HEPTACHLOR	970	UD
309-00-2	--ALDRIN	970	UD
1024-57-3	--HEPTACHLOR EPOXIDE	970	UD
959-98-8	--ENDOSULFAN I	970	UD
60-57-1	--DIELDRIN	1900	UD
72-55-9	--4,4'-DDE	1900	UD
72-20-8	--ENDRIN	1900	UD
33213-65-9	--ENDOSULFAN II	1900	UD
72-54-8	--4,4'-DDD	1900	UD
1031-07-8	--ENDOSULFAN SULFATE	1900	UD
50-29-3	--4,4'-DDT	1900	UD
72-43-5	--METHOXYCHLOR	9700	UD
53494-70-5	--ENDRIN KETONE	1900	UD
5103-71-9	--ALPHA-CHLORDANE	9700	UD
5103-74-2	--GAMMA-CHLORDANE	9700	UD
8001-35-2	--TOXAPHENE	19000	UD
12674-11-2	--AROCLOR-1016	9700	UD
11104-28-2	--AROCLOR-1221	9700	UD
11141-16-5	--AROCLOR-1232	9700	UD
53469-21-9	--AROCLOR-1242	9700	UD
12672-29-6	--AROCLOR-1248	9700	UD
11097-69-1	--AROCLOR-1254	19000	UD
11096-82-5	--AROCLOR-1260	19000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

SOIL-5

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~

Matrix (soil/water): SOIL Lab Sample ID: 90002239

Level (low/med): LOW Date Received: 04/20/90

% Solids: 82.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	453		*	P
7440-36-0	Antimony	5.5	U	N	F
7440-38-2	Arsenic	6.0		N*	F
7440-39-3	Barium	101		E*	P
7440-41-7	Beryllium	0.46	U		P
7440-43-9	Cadmium	0.69	U		P
7440-70-2	Calcium	306	B	E*	P
7440-47-3	Chromium	2.3	U	*	P
7440-48-4	Cobalt	2.3	U		P
7440-50-8	Copper	3.5	B		P
7439-89-6	Iron	4190			P
7439-92-1	Lead	60.5			F
7439-95-4	Magnesium	94.8	B	*	P
7439-96-5	Manganese	13.1			P
7439-97-6	Mercury	0.11			CV
7440-02-0	Nickel	4.6	U		P
7440-09-7	Potassium	166	B		A
7782-49-2	Selenium	0.32	B	N	F
7440-22-4	Silver	2.7			F
7440-23-5	Sodium	77.8	B		P
7440-28-0	Thallium	0.24	U		F
7440-62-2	Vanadium	3.9	B		P
7440-66-6	Zinc	1.6	U	N	P
	Cyanide	0.30	U		AS

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN

134

171 9

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

SOIL-6

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 4 (g/mL) G Lab File ID: E3348

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 12 Date Analyzed: 05/03/90

Column: (pack/cap) CAP Dilution Factor: 1

CONCENTRATION UNITS:
(ug/L or ug/kg) ug/KG

CAS NO.	COMPOUND	(ug/L or ug/kg) ug/KG	Q
74-87-3	Chloromethane	1400	U
74-83-9	Bromomethane	1400	U
75-01-4	Vinyl Chloride	1400	U
75-00-3	Chloroethane	1400	U
75-09-2	Methylene Chloride	710	U
67-64-1	Acetone	1400	U
75-15-0	Carbon Disulfide	710	U
75-35-4	1,1-Dichloroethene	710	U
75-34-3	1,1-Dichloroethane	710	U
540-59-0	1,2-Dichloroethene (total)	710	U
67-66-3	Chloroform	710	U
107-06-2	1,2-Dichloroethane	710	U
78-93-3	2-Butanone	1400	U
71-55-6	1,1,1-Trichloroethane	710	U
56-23-5	Carbon Tetrachloride	710	U
108-05-4	Vinyl Acetate	1400	U
75-27-4	Bromodichloromethane	710	U
78-87-5	1,2-Dichloropropane	710	U
10061-01-5	cis-1,3-Dichloropropene	710	U
79-01-6	Trichloroethene	710	U
124-48-1	Dibromochloromethane	710	U
79-00-5	1,1,2-Trichloroethane	710	U
71-43-2	Benzene	170	J
10061-02-6	trans-1,3-Dichloropropene	710	U
75-25-2	Bromoform	710	U
108-10-1	4-Methyl-2-pentanone	1400	U
591-78-6	2-Hexanone	1400	U
127-18-4	Tetrachloroethene	710	U
79-34-5	1,1,2,2-Tetrachloroethane	710	U
108-88-3	Toluene	300	J
108-90-7	Chlorobenzene	710	U
100-41-4	Ethylbenzene	220	J
100-42-5	Styrene	710	U
1330-20-7	Xylene (total)	2000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 4 (g/mL) G Lab File ID: E3348

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 12 Date Analyzed: 05/03/90

Column: CAP Dilution Factor: 1

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	15869939	OCTANE,3,5-DIMETHYL-	18.91	8900	J
2.	103651	BENZENE,PROPYL	19.23	10000	J
3.		C9H12 ISOMER	19.50	31000	J
4.		C9H12 ISOMER	19.72	15000	J
5.		UNKNOWN ALKANE	20.03	35000	J
6.		ETHYL METHYL BENZENE ISOMER	20.54	37000	J
7.		UNKNOWN ALKANE	20.72	9800	J
8.		UNKNOWN	21.09	5100	J
9.		UNKNOWN	21.74	5200	J
10.		UNKNOWN	21.92	8000	J
11.		C10H14 ISOMER/ALKANE	22.11	11000	J
12.	17302328	NONANE,3,7-DIMETHYL-	22.94	41000	J
13.	4292926	CYCLOHEXANE,PENTYL-	24.04	6700	J
14.		DIMETHYL NAPHTHALENE ISOMER	25.24	18000	J
15.		UNKNOWN ALKANE	25.61	11000	J
16.		C11H16 ISOMER	26.34	20000	J
17.		C12H18 ISOMER	26.85	6100	J
18.		DIHYDRO,DIMETHYL,1H-INDENE	27.69	8500	J
		ISOMER			
19.		METHYL NAPHTHALENE ISOMER	29.33	14000	J
20.		UNKNOWN	29.74	9600	J
21.					
22.					
23.					
24.					
25.					
26.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-6

Lab Name: TCI-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2649

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	380	U
111-44-4	bis(-2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
39638-32-9	bis(2-chloroisopropyl)ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic Acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	12000	E
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	34000	E
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-6

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2649

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	1400	
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	1800	
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	5200	
120-12-7	Anthracene	540	
84-74-2	Di-n-butylphthalate	390	
206-44-0	Fluoranthene	1500	
129-00-0	Pyrene	2400	
85-68-7	Butylbenzylphthalate	530	
91-94-1	3,3'-Dichlorobenzidine	760	U
56-55-3	Benzo(a)anthracene	650	
218-01-9	Chrysene	940	
117-81-7	bis(2-Ethylhexyl)phthalate	5000	
117-84-0	Di-n-octylphthalate	200	J
205-99-2	Benzo(b)fluoranthene	630	
207-08-9	Benzo(k)fluoranthene	~~380~~	~~U~~
50-32-8	Benzo(a)pyrene	420	
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

Co-elute

J-22-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-6

Lab Name: ~~ENVIRODYNE ENGINEERS~~ TCT-St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/mL) G Lab File ID: > D2649

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 1

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	7.35	280	J
2.		UNKNOWN	8.17	480	J
3.		UNKNOWN	8.97	320	J
4.		UNKNOWN	9.26	520	J
5.		UNKNOWN	9.32	360	J
6.		UNKNOWN	9.48	480	J
7.		UNKNOWN	10.22	1900	J
8.		UNKNOWN	11.24	360	J
9.		UNKNOWN C11H16 ISOMER	12.08	720	J
10.		UNKNOWN C12H18 ISOMER	12.33	640	J
11.		UNKNOWN	12.47	840	J
12.		UNKNOWN	12.59	240	J
13.		UNKNOWN C11H14 ISOMER	12.74	1100	J
14.		UNKNOWN C11H14 ISOMER	12.94	960	J
15.	90120	NAPHTHALENE, 1-METHYL-	13.76	1800	J
16.		UNKNOWN C12H12 ISOMER	15.09	17000	J
17.		UNKNOWN C12H12 ISOMER	15.32	26000	J
18.		UNKNOWN C12H12 ISOMER	15.57	10000	J
19.		UNKNOWN C13H14 ISOMER	16.41	3200	J
20.		UNKNOWN C13H14 ISOMER	16.71	3400	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-6 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2673

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 15

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	5600	U
111-44-4	bis(-2-Chloroethyl)ether	5600	U
95-57-8	2-Chlorophenol	5600	U
541-73-1	1,3-Dichlorobenzene	5600	U
106-46-7	1,4-Dichlorobenzene	5600	U
100-51-6	Benzyl alcohol	5600	U
95-50-1	1,2-Dichlorobenzene	5600	U
95-48-7	2-Methylphenol	5600	U
39638-32-9	bis(2-chloroisopropyl)ether	5600	U
106-44-5	4-Methylphenol	5600	U
621-64-7	N-Nitroso-di-n-propylamine	5600	U
67-72-1	Hexachloroethane	5600	U
98-95-3	Nitrobenzene	5600	U
78-59-1	Isophorone	5600	U
88-75-5	2-Nitrophenol	5600	U
105-67-9	2,4-Dimethylphenol	5600	U
65-85-0	Benzoic Acid	27000	U
111-91-1	bis(2-Chloroethoxy)methane	5600	U
120-83-2	2,4-Dichlorophenol	5600	U
120-82-1	1,2,4-Trichlorobenzene	5600	U
91-20-3	Naphthalene	11000	
106-47-8	4-Chloroaniline	5600	U
87-68-3	Hexachlorobutadiene	5600	U
59-50-7	4-Chloro-3-methylphenol	5600	U
91-57-6	2-Methylnaphthalene	64000	E
77-47-4	Hexachlorocyclopentadiene	5600	U
88-06-2	2,4,6-Trichlorophenol	5600	U
95-95-4	2,4,5-Trichlorophenol	27000	U
91-58-7	2-Chloronaphthalene	5600	U
88-74-4	2-Nitroaniline	27000	U
131-11-3	Dimethylphthalate	5600	U
208-96-8	Acenaphthylene	5600	U
606-20-2	2,6-Dinitrotoluene	5600	U

not outside range M Winter 5-24-90

FORM I SV-1 1/87 Rev

140
~~102~~

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-6 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2673

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 15

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	27000	U
83-32-9	Acenaphthene	1200	J
51-28-5	2,4-Dinitrophenol	27000	U
100-02-7	4-Nitrophenol	27000	U
132-64-9	Dibenzofuran	5600	U
121-14-2	2,4-Dinitrotoluene	5600	U
84-66-2	Diethylphthalate	5600	U
7005-72-3	4-Chlorophenyl-phenylether	5600	U
86-73-7	Fluorene	2200	J
100-01-6	4-Nitroaniline	27000	U
534-52-1	4,6-Dinitro-2-methylphenol	27000	U
86-30-6	N-Nitrosodiphenylamine	5600	U
101-55-3	4-Bromophenyl-phenylether	5600	U
118-74-1	Hexachlorobenzene	5600	U
87-86-5	Pentachlorophenol	27000	U
85-01-8	Phenanthrene	5000	J
120-12-7	Anthracene	5600	U
84-74-2	Di-n-butylphthalate	5600	U
206-44-0	Fluoranthene	1300	J
129-00-0	Pyrene	1900	J
85-68-7	Butylbenzylphthalate	5600	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	5600	U
218-01-9	Chrysene	5600	U
117-81-7	bis(2-Ethylhexyl)phthalate	4700	J
117-84-0	Di-n-octylphthalate	5600	U
205-99-2	Benzo(b)fluoranthene	5600	U
207-08-9	Benzo(k)fluoranthene	5600	U
50-32-8	Benzo(a)pyrene	5600	U
193-39-5	Indeno(1,2,3-cd)pyrene	5600	U
53-70-3	Dibenzo(a,h)anthracene	5600	U
191-24-2	Benzo(g,h,i)perylene	5600	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-6 RE DL

Lab Name: ~~ENVIRODYNE ENGINEERS~~ TCT- St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/mL) G Lab File ID: > D2673

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 4 Dilution Factor: 15

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.22	7200	J
2.	UNKNOWN	8.67	17000	J
3.	ETHYL DIMETHYL BENZENE ISOMER	8.75	10000	J
4.	UNKNOWN HYDROCARBON	8.89	14000	J
5.	UNKNOWN HYDROCARBON	9.02	9000	J
6. 1120214	UNDECANE	9.57	29000	J
7. 2050240	BENZENE,1,3-DIETHYL-5-	9.83	9000	J
	METHYL			
8.	UNKNOWN BENZENE COMPOUND	10.35	6600	J
9. 4132723	BENZENE,1,4-DIMETHYL-2-	11.86	8400	J
	(1-METHYLEHTYL)-			
10.	2,3_DIHYDRO-DIMETHYL-1H-	12.11	11000	J
	INDENE ISOMER			
11.	2,3,_DIHYDRO-DIMETHYL-1H-	12.33	8400	J
	INDENE ISOMER			
12. 90120	NAPHTHALENE,1-METHYL-	13.09	22000	J
13. 1127760	NAPHTHALENE,1-ETHYL-	14.30	27000	J
14.	UNKNOWN_DIMETHYL_NAPHTHALENE	14.46	51000	J
15.	UNKNOWN_DIMETHYL_NAPHTHALENE	14.69	78000	J
16.	UNKNOWN_DIMETHYL_NAPHTHALENE	14.95	22000	J
17.	UNKNOWN TRIMETHYL NAPHTHALENE	15.83	10000	J
18.	UNKNOWN_TRIMETHYL_NAPHTHALENE	16.41	18000	J
19.	UNKNOWN_TRIMETHYL_NAPHTHALENE	16.63	11000	J
20.	UNKNOWN NAPHTHALENE ISOMER	17.04	10000	J
21.				
22.				
23.				

142 ~~104~~

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

SOIL6 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 12.0 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 50

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	450	UDx
319-85-7	--BETA-BHC	450	UDx
319-86-8	--DELTA-BHC	450	UDx
58-89-9	--GAMMA-BHC	450	UDx
76-44-8	--HEPTACHLOR	450	UDx
309-00-2	--ALDRIN	450	UDx
1024-57-3	--HEPTACHLOR EPOXIDE	450	UD
959-98-8	--ENDOSULFAN I	450	UD
60-57-1	--DIELDRIN	910	UD
72-55-9	--4,4'-DDE	910	UD
72-20-8	--ENDRIN	910	UD
33213-65-9	--ENDOSULFAN II	910	UD
72-54-8	--4,4'-DDD	910	UD
1031-07-8	--ENDOSULFAN SULFATE	910	UD
50-29-3	--4,4'-DDT	910	UD
72-43-5	--METHOXYCHLOR	4500	UD
53494-70-5	--ENDRIN KETONE	910	UD
5103-71-9	--ALPHA-CHLORDANE	4500	UD
5103-74-2	--GAMMA-CHLORDANE	4500	UD
8001-35-2	--TOXAPHENE	9100	UD
12674-11-2	--AROCLOR-1016	4500	UDx
11104-28-2	--AROCLOR-1221	4500	UDx
11141-16-5	--AROCLOR-1232	4500	UDx
53469-21-9	--AROCLOR-1242	4500	UDx
12672-29-6	--AROCLOR-1248	4500	UD
11097-69-1	--AROCLOR-1254	9100	UD
11096-82-5	--AROCLOR-1260	9100	UD

FORM 1 PEST 1/87 Rev.

x - see form 1 for Dil 1:500 for actual DL's

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET | SOIL6 DL |

1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002240

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec. 12.0 dec. Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 4 Dilution Factor: 500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	4500	UD
319-85-7	--BETA-BHC	4500	UD
319-86-8	--DELTA-BHC	4500	UD
58-89-9	--GAMMA-BHC	4500	UD
76-44-8	--HEPTACHLOR	4500	UD
309-00-2	--ALDRIN	4500	UD
1024-57-3	--HEPTACHLOR EPOXIDE	4500	UD
959-98-8	--ENDOSULFAN I	4500	UD
60-57-1	--DIELDRIN	9100	UD
72-55-9	--4,4'-DDE	9100	UD
72-20-8	--ENDRIN	9100	UD
33213-65-9	--ENDOSULFAN II	9100	UD
72-54-8	--4,4'-DDD	9100	UD
1031-07-8	--ENDOSULFAN SULFATE	9100	UD
50-29-3	--4,4'-DDT	9100	UD
72-43-5	--METHOXYCHLOR	45000	UD
53494-70-5	--ENDRIN KETONE	9100	UD
5103-71-9	--ALPHA-CHLORDANE	45000	UD
5103-74-2	--GAMMA-CHLORDANE	45000	UD
8001-35-2	--TOXAPHENE	91000	UD
12674-11-2	--AROCLOR-1016	45000	UD
11104-28-2	--AROCLOR-1221	45000	UD
11141-16-5	--AROCLOR-1232	45000	UD
53469-21-9	--AROCLOR-1242	45000	UD
12672-29-6	--AROCLOR-1248	45000	UD
11097-69-1	--AROCLOR-1254	91000	UD
11096-82-5	--AROCLOR-1260	91000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-6

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ Field Blank

Matrix (soil/water): SOIL Lab Sample ID: 90002240

Level (low/med): LOW Date Received: 04/20/90

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	715		*	P
7440-36-0	Antimony	5.2	U	N	F
7440-38-2	Arsenic	1.3	B	N*	F
7440-39-3	Barium	278		E*	P
7440-41-7	Beryllium	0.44	U		P
7440-43-9	Cadmium	0.66	U		P
7440-70-2	Calcium	310	B	E*	P
7440-47-3	Chromium	2.2	U	*	P
7440-48-4	Cobalt	2.2	U		P
7440-50-8	Copper	3.1	U		P
7439-89-6	Iron	5570			P
7439-92-1	Lead	49.2			F
7439-95-4	Magnesium	240	B	*	P
7439-96-5	Manganese	22.3			P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	4.4	U		P
7440-09-7	Potassium	181	B		A
7782-49-2	Selenium	0.21	U	NW	F
7440-22-4	Silver	0.21	U		F
7440-23-5	Sodium	101	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	5.2	B		P
7440-66-6	Zinc	4.4	B	N	P
	Cyanide	0.64			AS

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-7

Lab Name: TCT ST.LOUIS Contract: 5540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 4 (g/mL) G Lab File ID: 83769

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 12 Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	1400	U
74-83-9	Bromomethane	1400	U
75-01-4	Vinyl Chloride	1400	U
75-00-3	Chloroethane	1400	U
75-09-2	Methylene Chloride	710	U
67-64-1	Acetone	500	J
75-15-0	Carbon Disulfide	710	U
75-35-4	1,1-Dichloroethene	710	U
75-34-3	1,1-Dichloroethane	710	U
540-59-0	1,2-Dichloroethene (total)	710	U
67-66-3	Chloroform	710	U
107-06-2	1,2-Dichloroethane	710	U
78-93-3	2-Butanone	1400	U
71-55-6	1,1,1-Trichloroethane	4600	
56-23-5	Carbon Tetrachloride	710	U
108-05-4	Vinyl Acetate	1400	U
75-27-4	Bromodichloromethane	710	U
78-87-5	1,2-Dichloropropane	710	U
10061-01-5	cis-1,3-Dichloropropene	710	U
79-01-6	Trichloroethene	710	U
124-48-1	Dibromochloromethane	710	U
79-00-5	1,1,2-Trichloroethane	710	U
71-43-2	Benzene	710	U
10061-02-6	trans-1,3-Dichloropropene	710	U
75-25-2	Bromoform	710	U
108-10-1	4-Methyl-2-pentanone	1400	U
591-78-6	2-Hexanone	1400	U
127-18-4	Tetrachloroethene	710	U
79-34-5	1,1,2,2-Tetrachloroethane	710	U
108-88-3	Toluene	710	U
108-90-7	Chlorobenzene	710	U
100-41-4	Ethylbenzene	710	U
100-42-5	Styrene	710	U
1330-20-7	Xylene (total)	~~2400~~ 3600	

DSBearl 5-25-90

FORM I VOA 1/87 Rev

146 H

108

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

SOIL-1

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3769

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 12 Date Analyzed: 04/30/90

Column: PACK Dilution Factor: 1

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	592778	2-HEPTENE	25.81	140000	J
2.		METHYL-ETHYL BENZENE ISOMER	33.75	24000	J
3.		UNKNOWN	29.53	38000	J
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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FORM I VOA-TIC 1/87 Rev.

147 H8

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-7

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2636

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

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	22000	U
106-46-7	1,4-Dichlorobenzene	22000	U
100-51-6	Benzyl alcohol	22000	U
95-50-1	1,2-Dichlorobenzene	22000	U
95-48-7	2-Methylphenol	22000	U
39638-32-9	bis(2-chloroisopropyl)ether	22000	U
106-44-5	4-Methylphenol	22000	U
621-64-7	N-Nitroso-di-n-propylamine	22000	U
67-72-1	Hexachloroethane	22000	U
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
65-85-0	Benzoic Acid	110000	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	22000	U
91-20-3	Naphthalene	22000	U
106-47-8	4-Chloroaniline	22000	U
87-68-3	Hexachlorobutadiene	22000	U
59-50-7	4-Chloro-3-methylphenol	22000	U
91-57-6	2-Methylnaphthalene	22000	U
77-47-4	Hexachlorocyclopentadiene	22000	U
88-06-2	2,4,6-Trichlorophenol	22000	U
95-95-4	2,4,5-Trichlorophenol	110000	U
91-58-7	2-Chloronaphthalene	22000	U
88-74-4	2-Nitroaniline	110000	U
131-11-3	Dimethylphthalate	22000	U
208-96-8	Acenaphthylene	22000	U
606-20-2	2,6-Dinitrotoluene	22000	U

~~185~~
148 ~~110~~

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-7

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2636

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	110000	U
83-32-9	Acenaphthene	3300	J
51-28-5	2,4-Dinitrophenol	110000	U
100-02-7	4-Nitrophenol	110000	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	10000	J
100-01-6	4-Nitroaniline	110000	U
534-52-1	4,6-Dinitro-2-methylphenol	110000	U
86-30-6	N-Nitrosodiphenylamine	22000	U
101-55-3	4-Bromophenyl-phenylether	22000	U
118-74-1	Hexachlorobenzene	22000	U
87-86-5	Pentachlorophenol	110000	U
85-01-8	Phenanthrene	19000	J
120-12-7	Anthracene	3500	J
84-74-2	Di-n-butylphthalate	7200	J
206-44-0	Fluoranthene	10000	J
129-00-0	Pyrene	16000	J
85-68-7	Butylbenzylphthalate	22000	U
91-94-1	3,3'-Dichlorobenzidine	45000	U
56-55-3	Benzo(a)anthracene	5400	J
218-01-9	Chrysene	6100	J
117-81-7	bis(2-Ethylhexyl)phthalate	94000	E
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	Dibenzo(a,h)anthracene	22000	U
191-24-2	Benzo(g,h,i)perylene	22000	U

M Winter 5-23-90

H 8/10

149 1/1

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-7

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2636

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 12 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 5 Dilution Factor: 1

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN C9H12 ISOMER	7.58	41000	J
2.		UNKNOWN C10H14 ISOMER	11.16	40000	J
3.		UNKNOWN	11.28	120000	J
4.		UNKNOWN C11H16 ISOMER	12.55	570000	J
5.		UNKNOWN C11H14 ISOMER	12.80	540000	J
6.		UNKNOWN C11H14 ISOMER	13.04	720000	J
7.		UNKNOWN	13.21	740000	J
8.		UNKNOWN C11H16 ISOMER	13.29	100000	J
9.	90120	NAPHTHALENE, 1-METHYL-	13.80	56000	J
10.		UNKNOWN	13.88	64000	J
11.		UNKNOWN	14.15	40000	J
12.		UNKNOWN C12H16 ISOMER	14.99	93000	J
13.		UNKNOWN C12H12 ISOMER	15.17	120000	J
14.		UNKNOWN C12H12 ISOMER	15.40	160000	J
15.		UNKNOWN	15.44	83000	J
16.		UNKNOWN C12H12 ISOMER	15.69	110000	J
17.		UNKNOWN C13H14 ISOMER	17.14	42000	J
18.		UNKNOWN ALKANE	18.91	86000	J
19.		UNKNOWN ALKANE	18.99	59000	J
20.		UNKNOWN ALKANE	21.19	48000	J
21.					
22.					
23.					
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28.					

FORM I SV-TIC 1/87 Rev.

150 H87

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

SOIL7 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002241

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 11.7 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/11/90

GPC Cleanup:(Y/N) N pH 5 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	1400	UD
319-85-7	--BETA-BHC	1400	UD
319-86-8	--DELTA-BHC	1400	UD
58-89-9	--GAMMA-BHC	1400	UD
76-44-8	--HEPTACHLOR	1400	UD
309-00-2	--ALDRIN	1400	UD
1024-57-3	--HEPTACHLOR EPOXIDE	1400	UD
959-98-8	--ENDOSULFAN I	1400	UD
60-57-1	--DIELDRIN	2700	UD
72-55-9	--4,4'-DDE	2700	UD
72-20-8	--ENDRIN	2700	UD
33213-65-9	--ENDOSULFAN II	2700	UD
72-54-8	--4,4'-DDD	2700	UD
1031-07-8	--ENDOSULFAN SULFATE	2700	UD
50-29-3	--4,4'-DDT	2700	UD
72-43-5	--METHOXYCHLOR	14000	UD
53494-70-5	--ENDRIN KETONE	2700	UD
5103-71-9	--ALPHA-CHLORDANE	14000	UD
5103-74-2	--GAMMA-CHLORDANE	14000	UD
8001-35-2	--TOXAPHENE	27000	UD
12674-11-2	--AROCLOR-1016	14000	UD
11104-28-2	--AROCLOR-1221	14000	UD
11141-16-5	--AROCLOR-1232	14000	UD
53469-21-9	--AROCLOR-1242	14000	UD
12672-29-6	--AROCLOR-1248	14000	UD
11097-69-1	--AROCLOR-1254	27000	UD
11096-82-5	--AROCLOR-1260	27000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-7

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ Field Blank

Matrix (soil/water): SOIL Lab Sample ID: 90002241

Level (low/med): LOW Date Received: 04/20/90

% Solids: 88.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4150		*	P
7440-36-0	Antimony	5.4	U	N	F
7440-38-2	Arsenic	2.1	B	N*	F
7440-39-3	Barium	466		E*	P
7440-41-7	Beryllium	2.9			P
7440-43-9	Cadmium	1.3			P
7440-70-2	Calcium	5970		E*	P
7440-47-3	Chromium	19.3		*	P
7440-48-4	Cobalt	5.6	B		P
7440-50-8	Copper	32.1			P
7439-89-6	Iron	49100			P
7439-92-1	Lead	181		*	P
7439-95-4	Magnesium	3090		*	P
7439-96-5	Manganese	1710			P
7439-97-6	Mercury	0.19			CV
7440-02-0	Nickel	14.1			P
7440-09-7	Potassium	404	B		A
7782-49-2	Selenium	0.22	U	N	F
7440-22-4	Silver	3.6		S	F
7440-23-5	Sodium	345	B		P
7440-28-0	Thallium	0.22	U		F
7440-62-2	Vanadium	15.5			P
7440-66-6	Zinc	118		N	P
	Cyanide	0.28	U		AS

Color Before: RD.BLACK Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

152 H/100 1/4

EPA SAMPLE NO

SOIL-8

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: TCT ST.LOUIS Contract: ~~3150~~ 3540 [illegible] 5-28-90

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 4 (g/mL) G Lab File ID: B3770

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 Date Analyzed: 04/30/90

Column: (pack/cap) PACK Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	1500	U
74-83-9	Bromomethane	1500	U
75-01-4	Vinyl Chloride	1500	U
75-00-3	Chloroethane	1500	U
75-09-2	Methylene Chloride	770	U
67-64-1	Acetone	1800	
75-15-0	Carbon Disulfide	770	U
75-35-4	1,1-Dichloroethene	190	J
75-34-3	1,1-Dichloroethane	2500	
540-59-0	1,2-Dichloroethene (total)	770	U
67-66-3	Chloroform	770	U
107-06-2	1,2-Dichloroethane	770	U
78-93-3	2-Butanone	1500	U
71-55-6	1,1,1-Trichloroethane	370000	E
56-23-5	Carbon Tetrachloride	770	U
108-05-4	Vinyl Acetate	1500	U
75-27-4	Bromodichloromethane	770	U
78-87-5	1,2-Dichloropropane	770	U
10061-01-5	cis-1,3-Dichloropropene	770	U
79-01-6	Trichloroethene	770	U
124-48-1	Dibromochloromethane	770	U
79-00-5	1,1,2-Trichloroethane	770	U
71-43-2	Benzene	770	U
10061-02-6	trans-1,3-Dichloropropene	770	U
75-25-2	Bromoform	770	U
108-10-1	4-Methyl-2-pentanone	1500	U
591-78-6	2-Hexanone	1500	U
127-18-4	Tetrachloroethene	770	U
79-34-5	1,1,2,2-Tetrachloroethane	770	U
108-88-3	Toluene	170000	E
108-90-7	Chlorobenzene	770	U
100-41-4	Ethylbenzene	18000	
100-42-5	Styrene	770	U
1330-20-7	Xylene (total)	320000	E

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-8

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 4 (g/mL) G Lab File ID: >B3770

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 Date Analyzed: 04/30/90

Column: PACK Dilution Factor: 1

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	31.79	230000	J
2.		ETHYL-METHYL BENZENE	33.68	240000	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8 BL RE

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 4 (g/mL) G Lab File ID: >E3340

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 Date Analyzed: 05/02/90

Column: (pack/cap) CAP Dilution Factor: 50

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

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	~~77000~~ 24000	UJ
74-83-9	Bromomethane	77000	U
75-01-4	Vinyl Chloride	77000	U
75-00-3	Chloroethane	77000	U
75-09-2	Methylene Chloride	39000	U
67-64-1	Acetone	77000	U
75-15-0	Carbon Disulfide	39000	U
75-35-4	1,1-Dichloroethene	39000	U
75-34-3	1,1-Dichloroethane	39000	U
540-59-0	1,2-Dichloroethene (total)	39000	U
67-66-3	Chloroform	39000	U
107-06-2	1,2-Dichloroethane	39000	U
78-93-3	2-Butanone	77000	U
71-55-6	1,1,1-Trichloroethane	150000	
56-23-5	Carbon Tetrachloride	39000	U
108-05-4	Vinyl Acetate	77000	U
75-27-4	Bromodichloromethane	39000	U
78-87-5	1,2-Dichloropropane	39000	U
10061-01-5	cis-1,3-Dichloropropene	39000	U
79-01-6	Trichloroethene	39000	U
124-48-1	Dibromochloromethane	39000	U
79-00-5	1,1,2-Trichloroethane	39000	U
71-43-2	Benzene	39000	U
10061-02-6	trans-1,3-Dichloropropene	39000	U
75-25-2	Bromoform	39000	U
108-10-1	4-Methyl-2-pentanone	77000	U
591-78-6	2-Hexanone	77000	U
127-18-4	Tetrachloroethene	39000	U
79-34-5	1,1,2,2-Tetrachloroethane	39000	U
108-88-3	Toluene	79000	
108-90-7	Chlorobenzene	39000	U
100-41-4	Ethylbenzene	14000	J
100-42-5	Styrene	39000	U
1330-20-7	Xylene (total)	170000	

5/29/90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SOIL-8 DIRE

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 5.4 (g/mL) G Lab File ID: >E3540

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 Date Analyzed: 04/30/90

Column: CAP Dilution Factor: x50

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

Number TICs found: 20

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ETHYL METHYL BENZENE ISOMER	19.49	190000	J
2.	ETHYL METHYL BENZENE ISOMER	20.53	150000	J
3. 762629	1-PENTENE,4,4-DIMETHYL-	22.39	220000	J
4. 535773	BENZENE,1-METHYL-3-(1-METHYL ETHYL)	22.94	160000	J
5.	C10H14 ISOMER	24.12	220000	J
6.	C10H14 ISOMER	24.22	380000	J
7.	C10H12 ISOMER	24.75	450000	J
8.	C10H12 ISOMER	25.14	830000	J
9.	UNKNOWN	25.43	240000	J
10.	C10H14 ISOMER	25.61	300000	J
11.	UNKNOWN	25.77	740000	J
12.	C11H16 ISOMER	26.28	770000	J
13. 91203	NAPHTHALENE (ACN) (DOT)	26.49	1100000	J
14. 1483609	BENZENE,2,4-DIMETHYL-1-(1-METHYLPROPYL)-	26.85	220000	J
15.	C11H16 ISOMER	27.30	370000	J
16.	C11H14 ISOMER	27.69	320000	J
17.	C11H14 ISOMER	28.10	290000	J
18.	C11H16 ISOMER	28.61	470000	J
19.	C11H10 ISOMER	29.32	1800000	J E
20.	C11H10 ISOMER	29.77	1200000	J
21.				
22.				
23.				
24.				
25.				
26.				

FORM I VOA-TIC 1/87 Rev.

156 1/18

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/ml) G Lab File ID: D2637

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
108-95-2	Phenol	24000	U
111-44-4	bis(-2-Chloroethyl)ether	24000	U
95-57-8	2-Chlorophenol	24000	U
541-73-1	1,3-Dichlorobenzene	24000	U
106-46-7	1,4-Dichlorobenzene	24000	U
100-51-6	Benzyl alcohol	24000	U
95-50-1	1,2-Dichlorobenzene	24000	U
95-48-7	2-Methylphenol	24000	U
39638-32-9	bis(2-chloroisopropyl)ether	24000	U
106-44-5	4-Methylphenol	24000	U
621-64-7	N-Nitroso-di-n-propylamine	24000	U
67-72-1	Hexachloroethane	24000	U
98-95-3	Nitrobenzene	24000	U
78-59-1	Isophorone	24000	U
88-75-5	2-Nitrophenol	24000	U
105-67-9	2,4-Dimethylphenol	24000	U
65-85-0	Benzoic Acid	120000	U
111-91-1	bis(2-Chloroethoxy)methane	24000	U
120-83-2	2,4-Dichlorophenol	24000	U
120-82-1	1,2,4-Trichlorobenzene	24000	U
91-20-3	Naphthalene	240000	~~E~~
106-47-8	4-Chloroaniline	24000	U
87-68-3	Hexachlorobutadiene	24000	U
59-50-7	4-Chloro-3-methylphenol	24000	U
91-57-6	2-Methylnaphthalene	1300000	E
77-47-4	Hexachlorocyclopentadiene	24000	U
88-06-2	2,4,6-Trichlorophenol	24000	U
95-95-4	2,4,5-Trichlorophenol	120000	U
91-58-7	2-Chloronaphthalene	24000	U
88-74-4	2-Nitroaniline	120000	U
131-11-3	Dimethylphthalate	24000	U
208-96-8	Acenaphthylene	24000	U
606-20-2	2,6-Dinitrotoluene	24000	U

m winter 5-23-90

H105

157 119

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2637

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	120000	U
83-32-9	Acenaphthene	38000	E
51-28-5	2,4-Dinitrophenol	120000	U
100-02-7	4-Nitrophenol	120000	U
132-64-9	Dibenzofuran	24000	U
121-14-2	2,4-Dinitrotoluene	24000	U
84-66-2	Diethylphthalate	24000	U
7005-72-3	4-Chlorophenyl-phenylether	24000	U
86-73-7	Fluorene	67000	E
100-01-6	4-Nitroaniline	120000	U
534-52-1	4,6-Dinitro-2-methylphenol	120000	U
86-30-6	N-Nitrosodiphenylamine	24000	U
101-55-3	4-Bromophenyl-phenylether	24000	U
118-74-1	Hexachlorobenzene	24000	U
87-86-5	Pentachlorophenol	120000	U
85-01-8	Phenanthrene	140000	E
120-12-7	Anthracene	19000	J
84-74-2	Di-n-butylphthalate	14000	J
206-44-0	Fluoranthene	44000	E
129-00-0	Pyrene	38000	E
85-68-7	Butylbenzylphthalate	5600	J
91-94-1	3,3'-Dichlorobenzidine	49000	U
56-55-3	Benzo(a)anthracene	22000	J
218-01-9	Chrysene	22000	J
117-81-7	bis(2-Ethylhexyl)phthalate	120000	E
117-84-0	Di-n-octylphthalate	4900	J
205-99-2	Benzo(b)fluoranthene \	11000	J
207-08-9	Benzo(k)fluoranthene /		
50-32-8	Benzo(a)pyrene	24000	U
193-39-5	Indeno(1,2,3-cd)pyrene	24000	U
53-70-3	Dibenzo(a,h)anthracene	24000	U
191-24-2	Benzo(g,h,i)perylene	13000	J

Not over cal. range
M. Winter
5-23-90

H106

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-8

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2637

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN C10H12 ISOMER	10.52	42000	J
2.	UNKNOWN C10H14 ISOMER	10.60	88000	J
3.	UNKNOWN C10H12 ISOMER	10.92	43000	J
4.	UNKNOWN	11.03	58000	J
5.	UNKNOWN C10H14 ISOMER	11.17	150000	J
6.	UNKNOWN C11H16 ISOMER	12.15	60000	J
7.	UNKNOWN C11H16 ISOMER	12.56	65000	J
8.	UNKNOWN C11H14 ISOMER	12.83	69000	J
9.	UNKNOWN C11H14 ISOMER	13.03	40000	J
10. 90120	NAPHTHALENE, 1-METHYL-	13.89	210000	J
11.	UNKNOWN C12H16/ALKANE	15.02	400000	J
12.	UNKNOWN C12H12 ISOMER	15.23	670000	J
13.	UNKNOWN C12H12 ISOMER	15.43	240000	J
14.	UNKNOWN C13H14 ISOMER	15.72	390000	J
15.	UNKNOWN C13H14 ISOMER	16.58	180000	J
16.	UNKNOWN C13H14 ISOMER	17.18	190000	J
17.	UNKNOWN C13H14 ISOMER	17.40	160000	J
18.	UNKNOWN ALKANE	18.95	105000	J
19.	UNKNOWN ALKANE	19.01	69000	J
20.	UNKNOWN ALKANE	21.23	66000	J
21.				
22.				
23.				
24.				
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FORM I SV-TIC 1/87 Rev.

158

H107

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8 RE DL

Lab Name: TCT- ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2672

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	240000	U
111-44-4	bis(-2-Chloroethyl)ether	240000	U
95-57-8	2-Chlorophenol	240000	U
541-73-1	1,3-Dichlorobenzene	240000	U
106-46-7	1,4-Dichlorobenzene	240000	U
100-51-6	Benzyl alcohol	240000	U
95-50-1	1,2-Dichlorobenzene	240000	U
95-48-7	2-Methylphenol	240000	U
39638-32-9	bis(2-chloroisopropyl)ether	240000	U
106-44-5	4-Methylphenol	240000	U
621-64-7	N-Nitroso-di-n-propylamine	240000	U
67-72-1	Hexachloroethane	240000	U
98-95-3	Nitrobenzene	240000	U
78-59-1	Isophorone	240000	U
88-75-5	2-Nitrophenol	240000	U
105-67-9	2,4-Dimethylphenol	240000	U
65-85-0	Benzoic Acid	1200000	U
111-91-1	bis(2-Chloroethoxy)methane	240000	U
120-83-2	2,4-Dichlorophenol	240000	U
120-82-1	1,2,4-Trichlorobenzene	240000	U
91-20-3	Naphthalene	270000	~~E~~
106-47-8	4-Chloroaniline	240000	U
87-68-3	Hexachlorobutadiene	240000	U
59-50-7	4-Chloro-3-methylphenol	240000	U
91-57-6	2-Methylnaphthalene	3200000	~~E~~
77-47-4	Hexachlorocyclopentadiene	240000	U
88-06-2	2,4,6-Trichlorophenol	240000	U
95-95-4	2,4,5-Trichlorophenol	1200000	U
91-58-7	2-Chloronaphthalene	240000	U
88-74-4	2-Nitroaniline	1200000	U
131-11-3	Dimethylphthalate	240000	U
208-96-8	Acenaphthylene	240000	U
606-20-2	2,6-Dinitrotoluene	240000	U

not outside cal. range
[illegible]
5-24-90

H108

159 122

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2672

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	1200000	U
83-32-9	Acenaphthene	38000	J
51-28-5	2,4-Dinitrophenol	1200000	U
100-02-7	4-Nitrophenol	1200000	U
132-64-9	Dibenzofuran	240000	U
121-14-2	2,4-Dinitrotoluene	240000	U
84-66-2	Diethylphthalate	240000	U
7005-72-3	4-Chlorophenyl-phenylether	240000	U
86-73-7	Fluorene	73000	J
100-01-6	4-Nitroaniline	1200000	U
534-52-1	4,6-Dinitro-2-methylphenol	1200000	U
86-30-6	N-Nitrosodiphenylamine	240000	U
101-55-3	4-Bromophenyl-phenylether	240000	U
118-74-1	Hexachlorobenzene	240000	U
87-86-5	Pentachlorophenol	1200000	U
85-01-8	Phenanthrene	150000	J
120-12-7	Anthracene	23000	J
84-74-2	Di-n-butylphthalate	240000	U
206-44-0	Fluoranthene	29000	J
129-00-0	Pyrene	52000	J
85-68-7	Butylbenzylphthalate	240000	U
91-94-1	3,3'-Dichlorobenzidine	490000	U
56-55-3	Benzo(a)anthracene	240000	U
218-01-9	Chrysene	240000	U
117-81-7	bis(2-Ethylhexyl)phthalate	120000	J
117-84-0	Di-n-octylphthalate	240000	U
205-99-2	Benzo(b)fluoranthene	240000	U
207-08-9	Benzo(k)fluoranthene	240000	U
50-32-8	Benzo(a)pyrene	240000	U
193-39-5	Indeno(1,2,3-cd)pyrene	240000	U
53-70-3	Dibenzo(a,h)anthracene	240000	U
191-24-2	Benzo(g,h,i)perylene	240000	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-8 RE DL

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2672

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 19 dec. Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 10

Number TICs found: 20

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		TETRAMETHYL BENZENE ISOMER	9.90	350000	J
2.	824226	1H-INDENE,2,3-DIHYDRO-4-METHYL	10.23	250000	J
3.	55669880	BENZENE,1,4-DIMETHYL-2-(2-METHYLPROPYL)-	10.35	240000	
4.	767588	1H-INDENE,2,3-DIHYDRO-1-METHYL	10.43	360000	J
5.	4132723	BENZENE,1,4-DIMETHYL-2-(1-METHYLETHYL)-	11.86	370000	J
6.	6682719	1H-INDENE,2,3-DIHYDRO-4,7-DIMETHYL	12.11	420000	J
7.		2,3-DIHYDRO-DIMETHYL-1H-INDENE ISOMER	12.33	220000	J
8.	90120	NAPHTHALENE,1-METHYL-	13.09	1600000	J
9.		DIMETHYL NAPHTHALENE ISOMER	14.46	1500000	J
10.		DIMETHYL NAPTHTALENE ISOMER	14.69	1800000	J
11.		DIMETHYL NAPTHTALENE ISOMER	14.95	820000	J
12.		TRIMETHYL NAPHTHALENE ISOMER	15.83	370000	J
13.		TRIMETHYL NAPHTHALENE ISOMER	16.12	340000	J
14.		TRIMETHYL NAPHTHALENE ISOMER	16.41	700000	J
15.		TRIMETHYL NAPHTHALENE ISOMER	16.61	470000	J
16		METHYL NAPHTHALENE ISOMER	17.07	410000	J
17.		UNKNOWN HYDROCARBON	18.22	1300000	J
18.		UNKNOWN HYDROCARBON	18.28	890000	J
19.		UNKNOWN HYDROCARBON	20.48	580000	J
20.		COLUMN BLEED	26.74	1200000	J
21.					
22.					
23.					
24.					

FORM I SV-TIC 1/87 Rev.

EPA SAMPLE NO.

SOIL8 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002242

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec. 18.9 dec. Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	1500	UD
319-85-7	--BETA-BHC	1500	UD
319-86-8	--DELTA-BHC	1500	UD
58-89-9	--GAMMA-BHC	1500	UD
76-44-8	--HEPTACHLOR	1500	UD
309-00-2	--ALDRIN	1500	UD
1024-57-3	--HEPTACHLOR EPOXIDE	1500	UD
959-98-8	--ENDOSULFAN I	1500	UD
60-57-1	--DIELDRIN	3000	UD
72-55-9	--4,4'-DDE	3000	UD
72-20-8	--ENDRIN	3000	UD
33213-65-9	--ENDOSULFAN II	3000	UD
72-54-8	--4,4'-DDD	3000	UD
1031-07-8	--ENDOSULFAN SULFATE	3000	UD
50-29-3	--4,4'-DDT	3000	UD
72-43-5	--METHOXYCHLOR	15000	UD
53494-70-5	--ENDRIN KETONE	3000	UD
5103-71-9	--ALPHA-CHLORDANE	15000	UD
5103-74-2	--GAMMA-CHLORDANE	15000	UD
8001-35-2	--TOXAPHENE	30000	UD
12674-11-2	--AROCLOR-1016	15000	UD
11104-28-2	--AROCLOR-1221	15000	UD
11141-16-5	--AROCLOR-1232	15000	UD
53469-21-9	--AROCLOR-1242	15000	UD
12672-29-6	--AROCLOR-1248	15000	UD
11097-69-1	--AROCLOR-1254	30000	UD
11096-82-5	--AROCLOR-1260	30000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-8

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~ Field Blw

Matrix (soil/water): SOIL Lab Sample ID: 90002242

Level (low/med): LOW Date Received: 04/20/90

% Solids: 81.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6030		*	P
7440-36-0	Antimony	5.7	U	N	F
7440-38-2	Arsenic	1.7	B	N*	F
7440-39-3	Barium	500		E*	P
7440-41-7	Beryllium	0.72	B		P
7440-43-9	Cadmium	1.9			P
7440-70-2	Calcium	11400		E*	P
7440-47-3	Chromium	22.0		*	P
7440-48-4	Cobalt	6.2	B		P
7440-50-8	Copper	19.6			P
7439-89-6	Iron	13800			P
7439-92-1	Lead	186		*	P
7439-95-4	Magnesium	8360	~~B~~	*	P
7439-96-5	Manganese	9240			P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	11.0			P
7440-09-7	Potassium	601	B		A
7782-49-2	Selenium	0.23	U	N	F
7440-22-4	Silver	0.83	B		F
7440-23-5	Sodium	340	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	20.6			P
7440-66-6	Zinc	119		N	P
	Cyanide	0.31	U		AS

Aud 5-25-90.

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

FORM I - IN 7/88

163 ~~112~~ 126

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 5 (g/mL) G Lab File ID: >F3422

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 Date Analyzed: 05/08/90

Column: (pack/cap) CAP Dilution Factor: 1

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	15	
67-64-1	Acetone	130	
75-15-0	Carbon Disulfide	12	U
75-35-4	1,1-Dichloroethene	12	U
75-34-3	1,1-Dichloroethane	12	U
540-59-0	1,2-Dichloroethene (total)	12	U
67-66-3	Chloroform	12	U
107-06-2	1,2-Dichloroethane	12	U
78-93-3	2-Butanone	23	U
71-55-6	1,1,1-Trichloroethane	280	E
56-23-5	Carbon Tetrachloride	12	U
108-05-4	Vinyl Acetate	23	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
79-01-6	Trichloroethene	12	U
124-48-1	Dibromochloromethane	12	U
79-00-5	1,1,2-Trichloroethane	12	U
71-43-2	Benzene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
75-25-2	Bromoform	12	U
108-10-1	4-Methyl-2-pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	18	
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-88-3	Toluene	23	
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	100	
100-42-5	Styrene	12	U
1330-20-7	Xylene (total)	840	E

BLB 5-24-90

164 127 H113

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-9

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3422

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 Date Analyzed: 05/08/90

Column: CAP Dilution Factor: 1

Number TICs found: 19 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	98828	BENZENE,(1-METHYLETHYL)-	18.26	130	J
2.	103651	BENZENE,PROPYL-	19.22	300	J
3.		ETHYL METHYL BENZENE ISOMER	19.49	1400	J
4.	108678	BENZENE,1,3,5-TRIMETHYL-	19.69	490	J
5.		ETHYL METHYL BENZENE ISOMER	20.10	370	J
6.		ETHYL METHYL BENZENE ISOMER	20.53	~~980~~ 910	J
7.		UNKNOWN ALKANE	21.18	40	J
8.		C9H12 ISOMER	21.45	82	J
9.		DIMETHYL BENZENE ISOMER	22.08	160	J
10.		C10H14 ISOMER	22.33	230	J
11.		C10H14 ISOMER	22.92	91	J
12.		C10H14 ISOMER	23.18	89	J
13.		ETHYL DIMETHYL BENZENE ISOMER	24.20	51	J
14.		C10H12 ISOMER	24.73	63	J
15.		C10H12 ISOMER	25.12	100	J
16.		UNKNOWN	25.59	44	J
17.		C11H16 ISOMER	26.26	86	J
18.	~~275514~~ 91203	~~AZULENE~~ Naphthalene	26.47	72	J
19.	91576	~~UNKNOWN~~ 2-methyl naphthalene	29.30	47	J
20					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I VOA-TIC 1/87 Rev.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9 RE DL

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 5 (g/mL) G Lab File ID: >E3425

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 Date Analyzed: 05/08/90

Column: (pack/cap) CAP Dilution Factor: 25

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

CAS NO.	COMPOUND	ug/KG	Q
74-87-3	Chloromethane	120	U
74-83-9	Bromomethane	120	U
75-01-4	Vinyl Chloride	120	U
75-00-3	Chloroethane	120	U
75-09-2	Methylene Chloride	58	U
67-64-1	Acetone	290	
75-15-0	Carbon Disulfide	58	U
75-35-4	1,1-Dichloroethene	58	U
75-34-3	1,1-Dichloroethane	58	U
540-59-0	1,2-Dichloroethene (total)	58	U
67-66-3	Chloroform	58	U
107-06-2	1,2-Dichloroethane	58	U
78-93-3	2-Butanone	120	U
71-55-6	1,1,1-Trichloroethane	310	
56-23-5	Carbon Tetrachloride	58	U
108-05-4	Vinyl Acetate	120	U
75-27-4	Bromodichloromethane	58	U
78-87-5	1,2-Dichloropropane	58	U
10061-01-5	cis-1,3-Dichloropropene	58	U
79-01-6	Trichloroethene	58	U
124-48-1	Dibromochloromethane	58	U
79-00-5	1,1,2-Trichloroethane	58	U
71-43-2	Benzene	58	U
10061-02-6	trans-1,3-Dichloropropene	58	U
75-25-2	Bromoform	58	U
108-10-1	4-Methyl-2-pentanone	120	U
591-78-6	2-Hexanone	120	U
127-18-4	Tetrachloroethene	58	U
79-34-5	1,1,2,2-Tetrachloroethane	58	U
108-88-3	Toluene	11	J
108-90-7	Chlorobenzene	58	U
100-41-4	Ethylbenzene	83	
100-42-5	Styrene	58	U
1330-20-7	Xylene (total)	610	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL ? [illegible]

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: ~~5~~ 1 (g/mL) G Lab File ID: >E3425

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 Date Analyzed: 05/08/90

Column: CAP Dilution Factor: 5

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 98828	BENZENE,(1-METHYLETHYL)-	18.26	230	J
2. 103651	BENZENE, PROPYL-	19.22	520	J
3.	ETHYL METHYL BENZENE ISOMER	19.49	2700	J
4.	ETHYL METHYL BENZENE ISOMER	19.69	1000	J
5.	ETHYL METHYL BENZENE ISOMER	20.10	750	J
6.	BENZENE,1,2,4-TRIMETHYL-	20.51	1600	J
7.	C9H2 ISOMER	21.45	190	J
8.	DIETHYL BENZENE ISOMER	22.08	340	J
9.	C10H14 ISOMER	22.35	380	J
10.	C10H14 ISOMER	22.94	260	J
11.	C10H14 ISOMER	23.18	280	J
12.	C10H14 ISOMER	24.22	310	J
13.	C10H12 ISOMER	24.73	350	J
14.	UNKNOWN	25.14	560	J
15.	UNKNOWN	25.59	210	J
16. 54120626	BENZENE,ETHYL-1,2,4-TRIMETHYL	26.26	440	J
17. 91203	NAPHTHALENE(ACN)(DOT)	26.49	440	J
18. 4706892	BENZENE,2,4-DIMETHYL-1-(1-METHYLETHYL)-	27.28	190	J
19.	C11H14 ISOMER	28.10	190	J
20.	UNKNOWN (2-methyl naphthalene)	29.30	300	J
21.	[illegible] 5-27-90			
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I VOA-TIC 1/87 Rev.

167

130

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/ml) G Lab File ID: D2650

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
108-95-2	Phenol	1100	U
111-44-4	bis(-2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
39638-32-9	bis(2-chloroisopropyl)ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	5200	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	790	J
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	2000	
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5200	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5200	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/ml) G Lab File ID: D2650

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5200	U
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	5200	U
100-02-7	4-Nitrophenol	5200	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	5200	U
534-52-1	4,6-Dinitro-2-methylphenol	5200	U
86-30-6	N-Nitrosodiphenylamine	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5200	U
85-01-8	Phenanthrene	380	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	U
206-44-0	Fluoranthene	420	J
129-00-0	Pyrene	540	J
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)anthracene	500	J
218-01-9	Chrysene	502	J
117-81-7	bis(2-Ethylhexyl)phthalate	7200	
117-84-0	Di-n-octylphthalate	370	J
205-99-2	Benzo(b)fluoranthene	1100	
207-08-9	Benzo(k)fluoranthene		
50-32-8	Benzo(a)pyrene	1000	
193-39-5	Indeno(1,2,3-cd)pyrene	1100	U
53-70-3	Dibenzo(a,h)anthracene	1100	U
191-24-2	Benzo(g,h,i)perylene	2500	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-9

Lab Name: ~~ENVIRODYNE ENGINEERS~~ TCT-St. Louis Contract: 3540

Lab Code: ~~EET~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/mL) G Lab File ID: ~~D2649~~ D2650

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/06/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: x 2

Number TICs found: ~~19~~ 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	COLUMN BLEED	4.04	4100	J
2.	UNKNOWN	4.47	6100	J
3.	UNKNOWN	4.84	1600	J
4.	UNKNOWN C9H12 ISOMER	7.29	4400	J
5.	UNKNOWN C9H12 ISOMER	7.43	2500	J
6.	UNKNOWN	9.27	960	J
7.	UNKNOWN	11.03	1400	J
8.	UNKNOWN	12.95	1800	J
9.	UNKNOWN	13.06	740	J
10.	UNKNOWN C11H16 ISOMER	13.12	1000	J
11. 90120	NAPHTHALENE, 1-METHYL-	13.61	1200	J
12.	UNKNOWN	13.75	900	J
13.	UNKNOWN C12H12 ISOMER	15.21	2700	J
14.	UNKNOWN C13H14 ISOMER	16.95	2900	J
15.	UNKNOWN ALKANE	17.50	2500	J
16.	UNKNOWN ALKANE	18.73	3100	J
17.	UNKNOWN ALKANE	22.07	3100	J
18.	UNKNOWN	28.42	7100	J
19.	UNKNOWN	30.78	3700	J
20.	UNKNOWN	33.71	5200	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				

FORM I SV-TIC 1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9 PE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/ml) G Lab File ID: >02664

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg		Q
108-95-2	Phenol	1100	U	
111-44-4	bis(-2-Chloroethyl)ether	1100	U	
95-57-8	2-Chlorophenol	1100	U	
541-73-1	1,3-Dichlorobenzene	1100	U	
106-46-7	1,4-Dichlorobenzene	1100	U	
100-51-6	Benzyl alcohol	1100	U	
95-50-1	1,2-Dichlorobenzene	1100	U	
95-48-7	2-Methylphenol	1100	U	
39638-32-9	bis(2-chloroisopropyl)ether	1100	U	
106-44-5	4-Methylphenol	1100	U	
621-64-7	N-Nitroso-di-n-propylamine	1100	U	
67-72-1	Hexachloroethane	1100	U	
98-95-3	Nitrobenzene	1100	U	
78-59-1	Isophorone	1100	U	
88-75-5	2-Nitrophenol	1100	U	
105-67-9	2,4-Dimethylphenol	1100	U	
65-85-0	Benzoic Acid	5200	U	
111-91-1	bis(2-Chloroethoxy)methane	1100	U	
120-83-2	2,4-Dichlorophenol	1100	U	
120-82-1	1,2,4-Trichlorobenzene	1100	U	
91-20-3	Naphthalene	700		J
106-47-8	4-Chloroaniline	1100	U	
87-68-3	Hexachlorobutadiene	1100	U	
59-50-7	4-Chloro-3-methylphenol	1100	U	
91-57-6	2-Methylnaphthalene	2400		
77-47-4	Hexachlorocyclopentadiene	1100	U	
88-06-2	2,4,6-Trichlorophenol	1100	U	
95-95-4	2,4,5-Trichlorophenol	5200	U	
91-58-7	2-Chloronaphthalene	1100	U	
88-74-4	2-Nitroaniline	5200	U	
131-11-3	Dimethylphthalate	1100	U	
208-96-8	Acenaphthylene	1100	U	
606-20-2	2,6-Dinitrotoluene	1100	U	

H120

171 1/34

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9 PE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/ml) G Lab File ID: >D2664

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	5200	U
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	5200	U
100-02-7	4-Nitrophenol	5200	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	5200	U
534-52-1	4,6-Dinitro-2-methylphenol	5200	U
86-30-6	N-Nitrosodiphenylamine	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5200	U
85-01-8	Phenanthrene	330	J
120-12-7	Anthracene	1100	U
84-74-2	Di-n-butylphthalate	1100	U
206-44-0	Fluoranthene	370	J
129-00-0	Pyrene	550	J
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)anthracene	490	J
218-01-9	Chrysene	1100	U
117-81-7	bis(2-Ethylhexyl)phthalate	8200	
117-84-0	Di-n-octylphthalate	310	J
205-99-2	Benzo(b)fluoranthene	960	J
207-08-9	Benzo(k)fluoranthene		
50-32-8	Benzo(a)pyrene	1100	
193-39-5	Indeno(1,2,3-cd)pyrene	780	J
53-70-3	Dibenzo(a,h)anthracene	1100	U
191-24-2	Benzo(g,h,i)perylene	2800	

Combined J. Hann 5/24/90

FORM I SV-2 1/87 Rev

H121

172 135

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
SOIL-9 PE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/mL) G Lab File ID: > D2664

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. 57 dec. 38 Date Extracted: 04/29/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: X2

J Ham 5/24/90

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	COLUMN BLEED	3.75	4500	J
2.	UNKNOWN	4.18	4800	J
3.	UNKNOWN	4.55	840	J
4.	UNKNOWN C9H12 ISOMER	7.02	4000	J
5.	UNKNOWN C9H12 ISOMER	7.19	2100	J
6.	UNKNOWN	10.27	1500	J
7.	UNKNOWN	10.81	840	J
8.	UNKNOWN	12.73	1200	J
9.	UNKNOWN C11H16 ISOMER	12.89	2300	J
10. 90120	NAPHTHALENE, 1-METHYL-	13.36	1400	J
11.	UNKNOWN C12H12 ISOMER	14.96	2300	J
12.	UNKNOWN ALKANE	17.26	2900	J
13.	UNKNOWN	17.40	2000	J
14.	UNKNOWN ALKANE	18.49	8500	J
15.	UNKNOWN ALKANE	18.58	5600	J
16.	UNKNOWN	20.45	4600	J
17.	UNKNOWN ALKANE	20.78	4100	J
18.	UNKNOWN	21.60	8600	J
19.	UNKNOWN	29.33	3400	J
20.	UNKNOWN	32.85	4300	J
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				

FORM I SV-TIC 1/87 Rev.

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

SOIL9 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002243

Sample wt/vol: 30 (g/ml) g Lab File ID:

Level: (low/med) LOW Date Received: 4-20-90

%Moisture: not dec.____ dec. 35.1 Date Extracted: 4-29-90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	130	UD
319-85-7	--BETA-BHC	130	UD
319-86-8	--DELTA-BHC	130	UD
58-89-9	--GAMMA-BHC	130	UD
76-44-8	--HEPTACHLOR	130	UD
309-00-2	--ALDRIN	130	UD
1024-57-3	--HEPTACHLOR EPOXIDE	130	UD
959-98-8	--ENDOSULFAN I	130	UD
60-57-1	--DIELDRIN	260	UD
72-55-9	--4,4'-DDE	260	UD
72-20-8	--ENDRIN	260	UD
33213-65-9	--ENDOSULFAN II	260	UD
72-54-8	--4,4'-DDD	260	UD
1031-07-8	--ENDOSULFAN SULFATE	260	UD
50-29-3	--4,4'-DDT	260	UD
72-43-5	--METHOXYCHLOR	1300	UD
53494-70-5	--ENDRIN KETONE	260	UD
5103-71-9	--ALPHA-CHLORDANE	1300	UD
5103-74-2	--GAMMA-CHLORDANE	1300	UD
8001-35-2	--TOXAPHENE	2600	UD
12674-11-2	--AROCLOR-1016	1300	UD
11104-28-2	--AROCLOR-1221	1300	UD
11141-16-5	--AROCLOR-1232	1300	UD
53469-21-9	--AROCLOR-1242	1300	UD
12672-29-6	--AROCLOR-1248	1300	UD
11097-69-1	--AROCLOR-1254	2600	UD
11096-82-5	--AROCLOR-1260	2600	UD

FORM 1 PEST 1/87 Rev.

174 H123

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-9

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~PB~~ Field Blank

Matrix (soil/water): SOIL Lab Sample ID: 90002243

Level (low/med): LOW Date Received: 04/20/90

% Solids: 42.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800		*	P
7440-36-0	Antimony	11.2	U	N	F
7440-38-2	Arsenic	13.6		N*	F
7440-39-3	Barium	2070		E*	P
7440-41-7	Beryllium	2.8			P
7440-43-9	Cadmium	4.2			P
7440-70-2	Calcium	8480		E*	P
7440-47-3	Chromium	90.0		*	P
7440-48-4	Cobalt	9.8	B		P
7440-50-8	Copper	113			P
7439-89-6	Iron	46300			P
7439-92-1	Lead	1580		*	P
7439-95-4	Magnesium	4710		*	P
7439-96-5	Manganese	1460			P
7439-97-6	Mercury	1.2			CV
7440-02-0	Nickel	30.8			P
7440-09-7	Potassium	1110	B		A
7782-49-2	Selenium	0.52	B	N	F
7440-22-4	Silver	2.9	B		F
7440-23-5	Sodium	1920	B		P
7440-28-0	Thallium	0.47	U		F
7440-62-2	Vanadium	56.4			P
7440-66-6	Zinc	403		N	P
	Cyanide	0.58	U		AS

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

SOIL-10

Lab Name: TCT ST.LOUIS Contract: 5540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 4 (g/mL) G Lab File ID: E3346

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 21 Date Analyzed: 05/03/90

Column: (pack/cap) CAP Dilution Factor: 50

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
74-87-3	Chloromethane	80000	U
74-83-9	Bromomethane	80000	U
75-01-4	Vinyl Chloride	80000	U
75-00-3	Chloroethane	80000	U
75-09-2	Methylene Chloride	40000	U
67-64-1	Acetone	80000	U
75-15-0	Carbon Disulfide	40000	U
75-35-4	1,1-Dichloroethene	40000	U
75-34-3	1,1-Dichloroethane	40000	U
540-59-0	1,2-Dichloroethene (total)	14000	J
67-66-3	Chloroform	40000	U
107-06-2	1,2-Dichloroethane	40000	U
78-93-3	2-Butanone	80000	U
71-55-6	1,1,1-Trichloroethane	40000	U
56-23-5	Carbon Tetrachloride	17000	J
108-05-4	Vinyl Acetate	80000	U
75-27-4	Bromodichloromethane	40000	U
78-87-5	1,2-Dichloropropane	40000	U
10061-01-5	cis-1,3-Dichloropropene	40000	U
79-01-6	Trichloroethene	25000	J
124-48-1	Dibromochloromethane	40000	U
79-00-5	1,1,2-Trichloroethane	40000	U
71-43-2	Benzene	40000	U
10061-02-6	trans-1,3-Dichloropropene	40000	U
75-25-2	Bromoform	40000	U
108-10-1	4-Methyl-2-pentanone	80000	U
591-78-6	2-Hexanone	80000	U
127-18-4	Tetrachloroethene	20000	J
79-34-5	1,1,2,2-Tetrachloroethane	40000	U
108-88-3	Toluene	110000	
108-90-7	Chlorobenzene	40000	U
100-41-4	Ethylbenzene	71000	
100-42-5	Styrene	40000	U
1330-20-7	Xylene (total)	470000	

M Winder 8-28-90

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-10

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 4 (g/mL) G Lab File ID: E3346

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 21 Date Analyzed: 05/03/90

Column: CAP Dilution Factor: 50

Number TICs found: ~~20~~ 19 MWinder 5-28-90

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. BJBlank 5-25-90	~~UNKNOWN~~	~~2.05~~	~~110000~~	~~J~~
2.	UNKNOWN	17.62	71000	J
3. 15869940	OCTANE,3,6-DIMETHYL-	17.97	430000	J
4. 52896874	HEPTANE,4-(1METHYLETHYL)-	18.24	200000	J
5. 15869939	OCTANE,3,5-DIMETHYL-	18.85	640000	J
6. 2051301	OCTANE,2,6-DIMETHYL-	19.16	230000	J
7.	UNKNOWN CYCLOALKANE	19.70	420000	J
8. 124185	DECANE	20.03	180000	J
9.	ETHYL METHYL BENZENE ISOMER	20.54	520000	J
10. 4110445	OCTANE,3,3-DIMETHYL-	20.72	360000	J
11.	UNKNOWN	20.89	910000	J
12.	UNKNOWN	21.09	180000	J
13.	ETHYL METHYL BENZENE ISOMER	21.48	160000	J
14.	UNKNOWN	21.72	910000	J
15.	UNKNOWN	21.91	200000	J
16. 13151343	DECANE,3-METHYL-	22.11	180000	J
17. 1120214	UNDECANE	22.91	930000	J
18. 4292926	CYCLOHEXANE, PENTYL-	24.03	140000	J
19.	UNKNOWN	25.60	130000	J
20.	UNKNOWN	25.76	350000	J
21.				
22.				
23.				
24.				
25.				

FORM I VOA-TIC 1/87 Rev.

177 H126 140

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-10

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2638

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
108-95-2	Phenol	26000	U
111-44-4	bis(-2-Chloroethyl)ether	26000	U
95-57-8	2-Chlorophenol	26000	U
541-73-1	1,3-Dichlorobenzene	26000	U
106-46-7	1,4-Dichlorobenzene	26000	U
100-51-6	Benzyl alcohol	26000	U
95-50-1	1,2-Dichlorobenzene	26000	U
95-48-7	2-Methylphenol	26000	U
39638-32-9	bis(2-chloroisopropyl)ether	26000	U
106-44-5	4-Methylphenol	26000	U
621-64-7	N-Nitroso-di-n-propylamine	26000	U
67-72-1	Hexachloroethane	26000	U
98-95-3	Nitrobenzene	26000	U
78-59-1	Isophorone	26000	U
88-75-5	2-Nitrophenol	26000	U
105-67-9	2,4-Dimethylphenol	26000	U
65-85-0	Benzoic Acid	130000	U
111-91-1	bis(2-Chloroethoxy)methane	26000	U
120-83-2	2,4-Dichlorophenol	26000	U
120-82-1	1,2,4-Trichlorobenzene	26000	U
91-20-3	Naphthalene	11000	J
106-47-8	4-Chloroaniline	26000	U
87-68-3	Hexachlorobutadiene	26000	U
59-50-7	4-Chloro-3-methylphenol	26000	U
91-57-6	2-Methylnaphthalene	18000	J
77-47-4	Hexachlorocyclopentadiene	26000	U
88-06-2	2,4,6-Trichlorophenol	26000	U
95-95-4	2,4,5-Trichlorophenol	130000	U
91-58-7	2-Chloronaphthalene	26000	U
88-74-4	2-Nitroaniline	130000	U
131-11-3	Dimethylphthalate	26000	U
208-96-8	Acenaphthylene	26000	U
606-20-2	2,6-Dinitrotoluene	26000	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-10

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2638

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/KG	Q
99-09-2	3-Nitroaniline	130000	U
83-32-9	Acenaphthene	26000	U
51-28-5	2,4-Dinitrophenol	130000	U
100-02-7	4-Nitrophenol	130000	U
132-64-9	Dibenzofuran	26000	U
121-14-2	2,4-Dinitrotoluene	26000	U
84-66-2	Diethylphthalate	26000	U
7005-72-3	4-Chlorophenyl-phenylether	26000	U
86-73-7	Fluorene	26000	U
100-01-6	4-Nitroaniline	130000	U
534-52-1	4,6-Dinitro-2-methylphenol	130000	U
86-30-6	N-Nitrosodiphenylamine	26000	U
101-55-3	4-Bromophenyl-phenylether	26000	U
118-74-1	Hexachlorobenzene	26000	U
87-86-5	Pentachlorophenol	130000	U
85-01-8	Phenanthrene	3800	J
120-12-7	Anthracene	26000	U
84-74-2	Di-n-butylphthalate	25000	J
206-44-0	Fluoranthene	2800	J
129-00-0	Pyrene	26000	U
85-68-7	Butylbenzylphthalate	26000	U
91-94-1	3,3'-Dichlorobenzidine	53000	U
56-55-3	Benzo(a)anthracene	26000	U
218-01-9	Chrysene	26000	U
117-81-7	bis(2-Ethylhexyl)phthalate	66000	
117-84-0	Di-n-octylphthalate	26000	U
205-99-2	Benzo(b)fluoranthene	26000	U
207-08-9	Benzo(k)fluoranthene	26000	U
50-32-8	Benzo(a)pyrene	26000	U
193-39-5	Indeno(1,2,3-cd)pyrene	26000	U
53-70-3	Dibenzo(a,h)anthracene	26000	U
191-24-2	Benzo(g,h,i)perylene	26000	U

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-10

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2638

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/04/90

GPC Cleanup: (Y/N) N pH: 2 Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	6.87	69000	J
2.	3-ETHYL-2-METHYL-HEPTANE	7.01	59000	J
3.	UNKNOWN ALKANE	7.32	96000	J
4.	UNKNOWN ALKANE	7.48	140000	J
5.	UNKNOWN ALKANE	7.54	56000	J
6.	UNKNOWN ALKANE	7.68	83000	J
7.	UNKNOWN	8.28	101000	J
8.	UNKNOWN ALKANE	8.85	56000	J
9.	UNKNOWN	8.93	69000	J
10.	UNKNOWN ALKANE	9.05	75000	J
11.	UNKNOWN C10H14 ISOMER	9.30	83000	J
12.	UNKNOWN	9.38	67000	J
13.	UNKNOWN	9.42	75000	J
14.	UNKNOWN ALKANE	9.55	110000	J
15.	UNKNOWN ALKANE	9.67	56000	J
16.	UNKNOWN ALKANE	10.24	370000	J
17.	UNKNOWN C10H14 ISOMER	10.53	53000	J
18.	UNKNOWN C10H14 ISOMER	11.16	69000	J
19.	UNKNOWN	11.39	930000	J
20.	UNKNOWN C10H7NO2	17.92	98000	J
21.				
22.				
23.				
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FORM I SV-TIC 1/87 Rev.

180 1129

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-10 PE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2663

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
1108-95-2	Phenol	26000	U
1111-44-4	bis(-2-Chloroethyl)ether	26000	U
195-57-8	2-Chlorophenol	26000	U
1541-73-1	1,3-Dichlorobenzene	26000	U
1106-46-7	1,4-Dichlorobenzene	26000	U
1100-51-6	Benzyl alcohol	26000	U
195-50-1	1,2-Dichlorobenzene	26000	U
195-48-7	2-Methylphenol	26000	U
139638-32-9	bis(2-chloroisopropyl)ether	26000	U
1106-44-5	4-Methylphenol	26000	U
1621-64-7	N-Nitroso-di-n-propylamine	26000	U
167-72-1	Hexachloroethane	26000	U
198-95-3	Nitrobenzene	26000	U
178-59-1	Isophorone	26000	U
188-75-5	2-Nitrophenol	26000	U
1105-67-9	2,4-Dimethylphenol	26000	U
165-85-0	Benzoic Acid	130000	U
1111-91-1	bis(2-Chloroethoxy)methane	26000	U
1120-83-2	2,4-Dichlorophenol	26000	U
1120-82-1	1,2,4-Trichlorobenzene	26000	U
191-20-3	Naphthalene	11000	J
1106-47-8	4-Chloroaniline	26000	U
187-68-3	Hexachlorobutadiene	26000	U
159-50-7	4-Chloro-3-methylphenol	26000	U
191-57-6	2-Methylnaphthalene	19000	J
177-47-4	Hexachlorocyclopentadiene	26000	U
188-06-2	2,4,6-Trichlorophenol	26000	U
195-95-4	2,4,5-Trichlorophenol	130000	U
191-58-7	2-Chloronaphthalene	26000	U
188-74-4	2-Nitroaniline	130000	U
1131-11-3	Dimethylphthalate	26000	U
1208-96-8	Acenaphthylene	26000	U
1606-20-2	2,6-Dinitrotoluene	26000	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL-10 PE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) G Lab File ID: >D2663

Level: (low/med) MED Date received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 2 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
99-09-2	3-Nitroaniline	130000	U
83-32-9	Acenaphthene	26000	U
51-28-5	2,4-Dinitrophenol	130000	U
100-02-7	4-Nitrophenol	130000	U
132-64-9	Dibenzofuran	26000	U
121-14-2	2,4-Dinitrotoluene	26000	U
84-66-2	Diethylphthalate	26000	U
7005-72-3	4-Chlorophenyl-phenylether	26000	U
86-73-7	Fluorene	1400	J
100-01-6	4-Nitroaniline	130000	U
534-52-1	4,6-Dinitro-2-methylphenol	130000	U
86-30-6	N-Nitrosodiphenylamine	26000	U
101-55-3	4-Bromophenyl-phenylether	26000	U
118-74-1	Hexachlorobenzene	26000	U
87-86-5	Pentachlorophenol	130000	U
85-01-8	Phenanthrene	3500	J
120-12-7	Anthracene	26000	U
84-74-2	Di-n-butylphthalate	15000	J
206-44-0	Fluoranthene	26000	U
129-00-0	Pyrene	26000	U
85-68-7	Butylbenzylphthalate	26000	U
91-94-1	3,3'-Dichlorobenzidine	53000	U
56-55-3	Benzo(a)anthracene	26000	U
218-01-9	Chrysene	26000	U
117-81-7	bis(2-Ethylhexyl)phthalate	71000	
117-84-0	Di-n-octylphthalate	26000	U
205-99-2	Benzo(b)fluoranthene	26000	U
207-08-9	Benzo(k)fluoranthene	26000	U
50-32-8	Benzo(a)pyrene	26000	U
193-39-5	Indeno(1,2,3-cd)pyrene	26000	U
53-70-3	Dibenzo(a,h)anthracene	26000	U
191-24-2	Benzo(g,h,i)perylene	26000	U

1431

182 145

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SOIL-10 RE

Lab Name: TCT-ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/mL) G Lab File ID: > D2663

Level: (low/med) MED Date Received: 04/20/90

% Moisture: not dec. 21 dec. 25 Date Extracted: 04/30/90

Extraction: (Sepf/Cont/Sonc) SONC Date Analyzed: 05/08/90

GPC Cleanup: (Y/N) N pH: 2 Dilution Factor: 1

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	6.45	71000	J
2.	UNKNOWN	6.88	105000	J
3.	UNKNOWN C9H12	7.07	130000	J
4.	UNKNOWN ALKANE	7.15	63000	J
5.	UNKNOWN ALKANE	7.29	79000	J
6.	UNKNOWN ALKANE	8.38	110000	J
7.	UNKNOWN	8.52	130000	J
8.	UNKNOWN	8.60	57000	J
9.	UNKNOWN ALKANE	8.68	81000	J
10.	UNKNOWN C10H14 ISOMER	8.91	72000	J
11.	UNKNOWN	8.97	76000	J
12.	UNKNOWN ALKANE	9.03	77000	J
13.	UNKNOWN ALKANE	9.09	52000	J
14.	UNKNOWN ALKANE	9.17	110000	J
15.	UNKNOWN ALKANE	9.30	52000	J
16.	UNKNOWN ALKANE	9.85	330000	J
17.	UNKNOWN ALKANE	10.14	73000	J
18.	UNKNOWN C10H14 ISOMER	10.77	64000	J
19.	UNKNOWN	11.00	890000	J
20.	UNKNOWN C10H7NO2	17.47	80000	J
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FORM I SV-TIC 1/87 Rev.

183 146 #132

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET 1D

SOIL10 DL

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec.____ dec. 25.1 Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/10/90

GPC Cleanup:(Y/N) N pH 2 Dilution Factor: 5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	800	UDx
319-85-7	--BETA-BHC	800	UDx
319-86-8	--DELTA-BHC	800	UDx
58-89-9	--GAMMA-BHC	800	UDx
76-44-8	--HEPTACHLOR	800	UDx
309-00-2	--ALDRIN	800	UDx
1024-57-3	--HEPTACHLOR EPOXIDE	800	UDx
959-98-8	--ENDOSULFAN I	800	UDx
60-57-1	--DIELDRIN	1600	UDx
72-55-9	--4,4'-DDE	1600	UDx
72-20-8	--ENDRIN	1600	UDx
33213-65-9	--ENDOSULFAN II	1600	UDx
72-54-8	--4,4'-DDD	1600	UDx
1031-07-8	--ENDOSULFAN SULFATE	1600	UDx
50-29-3	--4,4'-DDT	1600	UDx
72-43-5	--METHOXYCHLOR	8000	UDx
53494-70-5	--ENDRIN KETONE	1600	UDx
5103-71-9	--ALPHA-CHLORDANE	8000	UDx
5103-74-2	--GAMMA-CHLORDANE	8000	UDx
8001-35-2	--TOXAPHENE	16000	UDx
12674-11-2	--AROCLOR-1016	8000	UDx
11104-28-2	--AROCLOR-1221	8000	UDx
11141-16-5	--AROCLOR-1232	8000	UDx
53469-21-9	--AROCLOR-1242	8000	UDx
12672-29-6	--AROCLOR-1248	8000	UDx
11097-69-1	--AROCLOR-1254	16000	UDx
11096-82-5	--AROCLOR-1260	16000	UDx

FORM 1 PEST 1/87 Rev.

X - see form 1 for actual DL's

H133

184 147

EPA SAMPLE NO.

SOIL10 DL

PESTICIDE ORGANICS DATA SHEET
1D

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540/2 Sas: . SDG No.: FIELD BLANK

Matrix: (soil/water) SOIL Lab Sample ID: 90002244

Sample wt/vol: 1 (g/ml) g Lab File ID:

Level: (low/med) MED Date Received: 04/20/90

%Moisture: not dec.____ dec. 25.1 Date Extracted: 04/30/90

Extraction (SepF/Cont/Sonc) SONC Date Analyzed: 05/11/90

GPC Cleanup:(Y/N) N pH 2 Dilution Factor: 500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
319-84-6	--ALPHA-BHC	80000	UD
319-85-7	--BETA-BHC	80000	UD
319-86-8	--DELTA-BHC	80000	UD
58-89-9	--GAMMA-BHC	80000	UD
76-44-8	--HEPTACHLOR	80000	UD
309-00-2	--ALDRIN	80000	UD
1024-57-3	--HEPTACHLOR EPOXIDE	80000	UD
959-98-8	--ENDOSULFAN I	80000	UD
60-57-1	--DIELDRIN	160000	UD
72-55-9	--4,4'-DDE	160000	UD
72-20-8	--ENDRIN	160000	UD
33213-65-9	--ENDOSULFAN II	160000	UD
72-54-8	--4,4'-DDD	160000	UD
1031-07-8	--ENDOSULFAN SULFATE	160000	UD
50-29-3	--4,4'-DDT	160000	UD
72-43-5	--METHOXYCHLOR	800000	UD
53494-70-5	--ENDRIN KETONE	160000	UD
5103-71-9	--ALPHA-CHLORDANE	800000	UD
5103-74-2	--GAMMA-CHLORDANE	800000	UD
8001-35-2	--TOXAPHENE	1600000	UD
12674-11-2	--AROCLOR-1016	800000	UD
11104-28-2	--AROCLOR-1221	800000	UD
11141-16-5	--AROCLOR-1232	800000	UD
53469-21-9	--AROCLOR-1242	800000	UD
12672-29-6	--AROCLOR-1248	800000	UD
11097-69-1	--AROCLOR-1254	1600000	UD
11096-82-5	--AROCLOR-1260	1600000	UD

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SOIL10

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ Field Blank

Matrix (soil/water): SOIL Lab Sample ID: 90002244

Level (low/med): LOW Date Received: 04/20/90

% Solids: 78.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	300		*	P
7440-36-0	Antimony	6.0	U	N	F
7440-38-2	Arsenic	2.5		N*	F
7440-39-3	Barium	84.4		E*	P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.76	U		P
7440-70-2	Calcium	469	B	E*	P
7440-47-3	Chromium	4.8		*	P
7440-48-4	Cobalt	2.5	U		P
7440-50-8	Copper	7.6			P
7439-89-6	Iron	8160			P
7439-92-1	Lead	28.6			F
7439-95-4	Magnesium	194	B	*	P
7439-96-5	Manganese	36.0			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	5.8	B		P
7440-09-7	Potassium	191	B		A
7782-49-2	Selenium	0.36	B	NW	F
7440-22-4	Silver	0.25	U		F
7440-23-5	Sodium	149	B		P
7440-28-0	Thallium	0.25	U		F
7440-62-2	Vanadium	3.3	U		P
7440-66-6	Zinc	10.1		N	P
	Cyanide	0.85			AS

Color Before: BROWN Clarity Before: Texture: MED

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

H135

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002247

Sample wt/vol: 5 (g/mL) ML Lab File ID: >E3280

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. Date Analyzed: 04/27/90

Column: (pack/cap) CAP Dilution Factor: 1

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	13	
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	4	J
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	11	
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	8	
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002247

Sample wt/vol: 5 (g/mL) ML Lab File ID: >E3280

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. Date Analyzed: 04/27/90

Column: CAP Dilution Factor: 1

Number TICs found: 2

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541059	CYCLOTRISILOXANE,HEXAMETHYL	14.66	28	J
2.		DICHLOROBENZENE ISOMER	21.90	4	J
3.					
4.					
5.					
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7.					
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9.					
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FORM I VOA-TIC 1/87 Rev.

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188 151

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002248

Sample wt/vol: 5 (g/mL) ML Lab File ID: >E3281

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. Date Analyzed: 04/27/90

Column: (pack/cap) CAP Dilution Factor: 1

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	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002248

Sample wt/vol: 5 (g/mL) ML Lab File ID: >E3281

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. Date Analyzed: 04/27/90

Column: CAP Dilution Factor: 1

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	541059	CYCLOTRISILOXANE,HEXAMETHYL-	14.70	43	J
2.					
3.					
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: ~~Envirodyne Engineers~~ TCT- St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002248

Sample wt/vol: 1000 (g/ml) ML Lab File ID: >F3597

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. dec. Date Extracted: 04/25/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 04/30/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

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

CAS NO.	COMPOUND		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	20	U
106-46-7	1,4-Dichlorobenzene	20	U
100-51-6	Benzyl alcohol	20	U
95-50-1	1,2-Dichlorobenzene	20	U
95-48-7	2-Methylphenol	20	U
39638-32-9	bis(2-chloroisopropyl)ether	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
65-85-0	Benzoic acid	100	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	20	U
91-20-3	Naphthalene	20	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	20	U
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	100	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	100	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: ~~Envirodyne Engineers~~ TCT- St. Louis Contract: 3540

Lab Code: ~~EEI~~ TCT Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: 90002248

Sample wt/vol: ~~1.0~~ 1000 (g/ml) ML Lab File ID: >F3597

Level: (low/med) LOW Date received: 04/20/90

% Moisture: not dec. dec. Date Extracted: 04/25/90

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 04/30/90

GPC Cleanup: (Y/N) N pH: ~~7.8~~ Dilution Factor: ~~1.0~~

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	100	U
83-32-9	Acenaphthene	20	U
51-28-5	2,4-Dinitrophenol	100	U
100-02-7	4-Nitrophenol	100	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	100	U
534-52-1	4,6-Dinitro-2-methylphenol	100	U
86-30-6	N-Nitrosodiphenylamine	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	100	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
84-74-2	Di-n-butylphthalate	20	U
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
85-68-7	Butylbenzylphthalate	3	J
91-94-1	3,3'-Dichlorobenzidine	40	U
56-55-3	Benzo(a)anthracene	20	U
218-01-9	Chrysene	20	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	JB
117-84-0	Di-n-octylphthalate	2	JB
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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD ~~FIELD~~ BLANK

Lab Name: TCT ST.LOUIS Contract: 3540

Lab Code: EEI Case No.: 00002 SAS No.: SDG No.: FIELD BLANK

Matrix: (soil/water) WATER Lab Sample ID: OFA3785

Sample wt/vol: 1000 (g/mL) ML Lab File ID: >F3597

Level: (low/med) LOW Date Received: 04/20/90

% Moisture: not dec. dec. Date Extracted: 04/25/90

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/30/90

Cleanup: (Y/N) N pH 7 Dilution Factor: 1

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 128370	PHENOL,2,6-BIS(1,1-DIMETHYL-ETHYL)-4-METHYL-	16.34	21	J
2.				
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FORM I SV-TIC 1/87 Rev.

EPA SAMPLE NO.

PESTICIDE ORGANICS DATA SHEET
1D

FIELD-BLK

Lab Name: ENVIRODYNE ENGINEERS Contract:

Lab Code: EEI Case No.: 3540-2 Sas: SDG No.: Field Blank

Matrix: (soil/water) WATER Lab Sample ID: 90002248

Sample wt/vol: 1000(g/ml) ml Lab File ID:

Level: (low/med)low Date Received: 4-20-90

%Moisture: not dec._NA_ dec._NA_ Date Extracted: 4-25-90

Extraction (SepF/Cont/Sonc) SEPF Date Analyzed: 05/09/90

GPC Cleanup:(Y/N) N pH 5 Dilution Factor: 1

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	0.050	U
76-44-8	--HEPTACHLOR	0.050	U
309-00-2	--ALDRIN	0.050	U
1024-57-3	--HEPTACHLOR EPOXIDE	0.050	U
959-98-8	--ENDOSULFAN I	0.050	U
60-57-1	--DIELDRIN	0.10	U
72-55-9	--4,4'-DDE	0.10	U
72-20-8	--ENDRIN	0.10	U
33213-65-9	--ENDOSULFAN II	0.10	U
72-54-8	--4,4'-DDD	0.10	U
1031-07-8	--ENDOSULFAN SULFATE	0.10	U
50-29-3	--4,4'-DDT	0.10	U
72-43-5	--METHOXYCHLOR	0.50	U
53494-70-5	--ENDRIN KETONE	0.10	U
5103-71-9	--ALPHA-CHLORDANE	0.50	U
5103-74-2	--GAMMA-CHLORDANE	0.50	U
8001-35-2	--TOXAPHENE	1.0	U
12674-11-2	--AROCLOR-1016	0.50	U
11104-28-2	--AROCLOR-1221	0.50	U
11141-16-5	--AROCLOR-1232	0.50	U
53469-21-9	--AROCLOR-1242	0.50	U
12672-29-6	--AROCLOR-1248	0.50	U
11097-69-1	--AROCLOR-1254	1.0	U
11096-82-5	--AROCLOR-1260	1.0	U

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIELD BLANK

Lab Name: TCT-ST. LOUIS Contract: 3540

Lab Code: Case No.: 00002 SAS No.: SDG No.: ~~FB~~ Field Blank

Matrix (soil/water): WATER Lab Sample ID: 90002248

Level (low/med): LOW Date Received: 04/20/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	64.0	U		P
7440-36-0	Antimony	24.0	U		F
7440-38-2	Arsenic	2.0	U		F
7440-39-3	Barium	3.0	U		P
7440-41-7	Beryllium	2.0	U		P
7440-43-9	Cadmium	3.0	U		P
7440-70-2	Calcium	104	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	10.0	U		P
7440-50-8	Copper	14.0	U		P
7439-89-6	Iron	23.0	U		P
7439-92-1	Lead	5.0			F
7439-95-4	Magnesium	14.0	B		P
7439-96-5	Manganese	5.0	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	20.0	U		P
7440-09-7	Potassium	27.0	U		A
7782-49-2	Selenium	1.0	U	W	F
7440-22-4	Silver	1.0	U		F
7440-23-5	Sodium	256	U		P
7440-28-0	Thallium	5.0	U		F
7440-62-2	Vanadium	13.0	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide	5.0	U		AS

Color Before: CLEAR Clarity Before: CLEAR Texture:

Color After: CLEAR Clarity After: CLEAR Artifacts:

Comments:

ATTACHMENT I

AUG 10 1990

Let's protect our earth

Ken

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS SITE MITIGATION
CN 413, Trenton, N.J. 08625-0413
(609) 984-2902
Fax # (609) 633-2360

Anthony J. Farro
Director

AUG 08 1990

M E M O R A N D U M

TO: Frank Sorce, HSMS I
Bureau of Planning and Assesment

THROUGH: Greg Toffoli, Acting Section Chief 8/8/90
Dorothy Lin, HSMS II 8/08/90
Quality Assurance Section
Bureau of Environmental Measurements and Quality Assurance

FROM: Jeanae' Mazzone, HSMS IV JM 8-2-90
Quality Assurance Section
Bureau of Environmental Measurements and Quality Assurance

SUBJECT: Data Quality Review of the Aetna Chemical sampling event on April 19, 1990. Laboratory analyses were performed by Envirodyne Labortories for volatiles, semi-volatiles, pesticides/pcbs and inorganics. Reviewed samples were:

Sample ID	Lab ID	Matrix
Soil 1	90002235	Non-aqueous
FB	90002248	Aqueous
TB	90002247	Aqueous

The Quality Assurance Section, Bureau of Environmental Measurements and Quality Assurance, Division of Hazardous Site Mitigation has reviewed the above mentioned samples according to the EPA CLP 7/87 SOW deliverable requirements. The quality assurance review is summarized below. A detailed evaluation is available for your review.

General Comments

No methodology review was submitted by the laboratory for the inorganic fraction.

Volatiles

The non-detect results for the analyte 2-Butanone in the field blank, trip blank, matrix spike/matrix spike duplicate, and all associated

method blanks are rejected because the average RRF for that analyte in the associated initial and continuing calibration is less than 0.05.

The positive result for the analyte 2-Butanone in sample Soil-1 is qualified because the average RRF for that analyte in the associated initial and continuing calibration is less than 0.05.

Semi-volatiles

The internal standard, Perylene-d12, was outside quality control limits in both the initial and re-analysis associated with Method Blank SBLK02(RE). Therefore, the method blank and associated samples Soil 1 and Soil 2MS/MSD are rejected.

The surrogate, Terphenyl-d14 is outside quality control limits for %Difference in the continuing calibrations associated with the field blank and Method Blank SBLK01. Therefore, the base neutral fraction is qualified in the above mentioned blanks.

Pesticides/PCBs

The breakdown calculated by QAS for 4,4'-DDT and Endrin in the primary instrument performance does not agree with the breakdown reported by the laboratory. The end user should be aware of this discrepancy. (QAS calculations: 4,4'-DDT = 4.7%, Endrin = 5.9%; Laboratory calculations: 4,4'-DDT = 3.8%, Endrin = 0%.) However, this does not affect the data since the breakdowns were still within the quality control limits allowed by QAS.

Inorganics

There was no ICP linear range analyzed or reported for the quarter in which the analyses associated with the reviewed samples were performed. All samples and blanks are conditionally rejected. However, the data are still considered useable by QAS.

The positive result for Lead in sample Soil 1 and the non-detect result for Chromium in the field blank are qualified because each analyte had less than 80% recovery in the CRDL analyses. Also, the positive result for Zinc in sample Soil 1 is rejected because the analyte had a % recovery greater than 150% in the CRDL analyses.

Antimony and Arsenic had sample spike analysis recoveries that did not meet quality control criteria and whose sample result is less than four times the sample added. Therefore, these analytes are qualified in sample Soil 1. The sample spike analysis recovery for Selenium was extremely below quality control limits. As such, the sample result for Selenium in sample Soil 1 is qualified and biased low.

Barium and Calcium do not meet the quality control limit of 10% Difference for serial dilution and are therefore qualified in sample Soil 1.

Aluminum, Arsenic, Barium, Calcium, Chromium, Lead and Magnesium did not meet quality control limits in the duplicate analysis and are therefore qualified in the sample Soil 1.

The non-detect result for Selenium in the field blank is qualified because the spike recovery for the furnace analysis is greater than 40% but outside the quality control limits, and the sample absorbance or concentration is less than 50% of the spike.

The positive result for Sodium is qualified in the sample Soil 1 because the concentration of this non-ICS solution analyte in the sample is less than 5x the concentration in the associated ICS sample. Therefore, the presence of the analyte could be a false positive.

If you have any questions, please do not hesitate to contact this office at 3-0752.

c: William Lowry, BEMQA
Joseph Sanguiliano, BEMQA
Bob Patel, BHWE
Thomas Sherman, BHWE
Linda Grayson, BPA
Bruce Venner, BCTS

199 6 of 3

Target Analyte Summary List

Site Name: AETNA

Sample	Method Blank Conc.	Lab Report Conc.	QAS Report Conc.	QAS Decision	Footnotes
VOLATILES					
Soil 1 (ug/kg)					
MeCl2	1J	16	16B	Negate	17
Acetone	16	26	26B	Negate	4
1,1-Dichloro-ethane	U	4J	4J	Qualify	9
2-Butanone	U	26J	26J	Qualify	2
Benzene	U	2J	2J	Qualify	9
4-Methyl-2-pentanone	U	61	61		
Toluene	U	72	72J	Qualify	6
Ethylbenzene	U	42	42		
Xylene(total)	U	810	810		
1,1,1-Trichloro ethane	U	310	310		
FB (ug/l)					
MeCl2	U	3J	3J	Qualify	9
Chloroform	U	1J	1J	Qualify	9
2-Butanone	U	10U	---	Reject	3
Non-targets:					
Hexamethylcyclo-trisiloxane	24J	43	43	Negate	4
TB (ug/l)					
MeCl2	U	13	13		
2-Butanone	U	10U	---	Reject	3
Trichloro-ethene	U	4J	4J	Qualify	9
Tetrachloro-ethene	U	11	11		
Toluene	U	8	8		
Non-targets:					
Hexamethylcyclo trisiloxane	24J	28J	28B	Negate	4
SEMI-VOLATILES					
Soil 1 (ug/kg)					

200

The internal standard, Perylene-d12, is outside quality control limits for Method Blank SBLK02(RE). Therefore, all positive and non-detect results in associated sample Soil 1 are rejected for the semi-volatile fraction.

Naphthalene	U	27000	---	Reject	16
2-Methyl-naphthalene	U	290000	---	Reject	16
Acenaphthene	U	11000J	---	Reject	16
Fluorene	U	12000J	---	Reject	16
Phenanthrene	U	40000	---	Reject	16
Anthracene	U	4900J	---	Reject	16
Fluoranthene	U	12000J	---	Reject	16
Pyrene	U	21000J	---	Reject	16
Bis(2-ethylhexyl) phthalate	U	14000J	---	Reject	16

Non-targets: Seventeen non-target analytes were reported by the laboratory and QAS agrees with the laboratory's determinations. Another three non-target analytes were reported by the laboratory (Retention Times: 24.97, 26.25, 27.44) and are due to column bleed.

FB (ug/l)

The base neutral fraction in the field blank is qualified because the surrogate, Terphenyl-d14 is outside quality control limits for %D in the associated continuing calibration.

Butylbezyl-phthalate	U	3J	3J	Qualify	9
Bis(2-ethylhexyl) phthalate	6J	4B	4B	Negate	4
Di-n-octyl-phthalate	3J	2	2B	Negate	4

INORGANICS

Soil 1 (mg/kg)

Aluminum	13J	7130	7130J	Qualify	5,7
Antimony	U	5.4U	5.4UJ	Qualify	22
Arsenic	U	1.6	1.6J	Qualify	7,8,13
Barium	U	1120	1120J	Qualify	7,10
Beryllium	U	.67	.67J	Qualify	8
Cadmium	U	1.3	1.3		
Calcium	236J	830	830B	Qualify	7,20
Chromium	U	10.6	---	Reject	21
Cobalt	U	3.6	3.6J	Qualify	8
Copper	U	18.0	18.0		
Iron	U	10100	10100		
Lead	U	1250	1250J	Qualify	7,18
Magnesium	28J	1410	1410B	Qualify	5,7
Manganesse	U	841	841		

200 V

Mercury	U	.18	.18		
Nickel	U	6.5	6.5J	Qualify	8
Potassium	U	256	256		
Selenium	U	.42	.42J	Qualify	8,13
Silver	U	.22U	.22U		
Sodium	U	97.1	97.1J	Qualify	8,12
Vanadium	U	22.7	22.7		
Zinc	U	28.6	---	Reject	19

FB (ug/l)

Chromium	U	10.0U	10.0UJ	Qualify	11
Lead	2.6J	5.0	5.0J	Qualify	7
Magnesium	51J	14.0B	14.0B	Negate	4
Selenium	U	1.0U	1.0UJ	Qualify	14

201 X

Mercury	U	.18	.18		
Nickel	U	6.5	6.5J	Qualify	8
Potassium	U	256	256		
Selenium	U	.42	.42J	Qualify	8,13
Silver	U	.22U	.22U		
Sodium	U	97.1	97.1J	Qualify	8,12
Vanadium	U	22.7	22.7		
Zinc	U	28.6	---	Reject	19

FB (ug/l)

Chromium	U	10.0U	10.0UJ	Qualify	11
Lead	2.6J	5.0	5.0J	Qualify	7
Magnesium	51J	14.0B	14.0B	Negate	4
Selenium	U	1.0U	1.0UJ	Qualify	14

202 I 6

Target and Non Target Compound Summary List

Footnotes:

1. The reported concentration is quantitatively qualified due to calibration deficiencies.

2. The reported concentration is qualified because the calibration response factor for the analyte is less than 0.05.

3. The non-detected value is rejected because the calibration response factor for the analyte is less than 0.05.

4. The value reported was less than 3x the value in the method blank. Therefore, QAS negated the reported value due to probable method blank contamination.

5. The reported value was greater than 5x the value in the method blank and is considered "real" but the result is qualified because of possible method blank contamination.

6. The reported value was greater than 5 times the value in the field/trip blank and is considered "real" but the result is qualified because of possible field/trip blank contamination.

7. The analyte failed to meet the critieria in the duplicate sample analysis. Therefore, the result of this analyte was qualified.

8. The reported concentration was quantitatively qualified because the concentration was below the CRDL but greater than the IDL. The concentration is considered estimated since the value obtained is at the low end of the instrument performance.

9. The reported concentration is quantitatively qualified because the concentration is below the CRQL.

10. The reported metal value was qualified because the serial dilution was not within 10 percent of the sample concentration.

11. The non-detected metal value was qualified because the percent recovery for the CRDL analysis was less than 80%.

12. The reported metal value was qualified because the concentration of this non-ICS solution analyte in the sample is less than 5x the concentration in the associated ICS sample. The presence of the analyte could be a false positive.

13. The positive result for the analyte is qualified and may be biased low because the spike recovery was less than 74%.

14. The non-detect result is flagged with "W" because the spike recovery for furnace analysis is greater than 40% but outside the QA limits, and the sample absorbance or concentration is less than 50% of the spike.

15. The reported metal value was qualified because the spike recovery was greater than 125 percent.

16. The value is rejected because an internal standard is outside quality control limits for the associated method blank.

17. The value reported is less than 3x the value in the field/trip blank. Therefore, QAS negated the reported value due to probable field/trip blank contamination.

18. The reported metal value was qualified because the percent recovery for the CRDL analysis was less than 80%.

19. The reported metal value was rejected because the percent recovery for the CRDL analysis was greater than 150%.

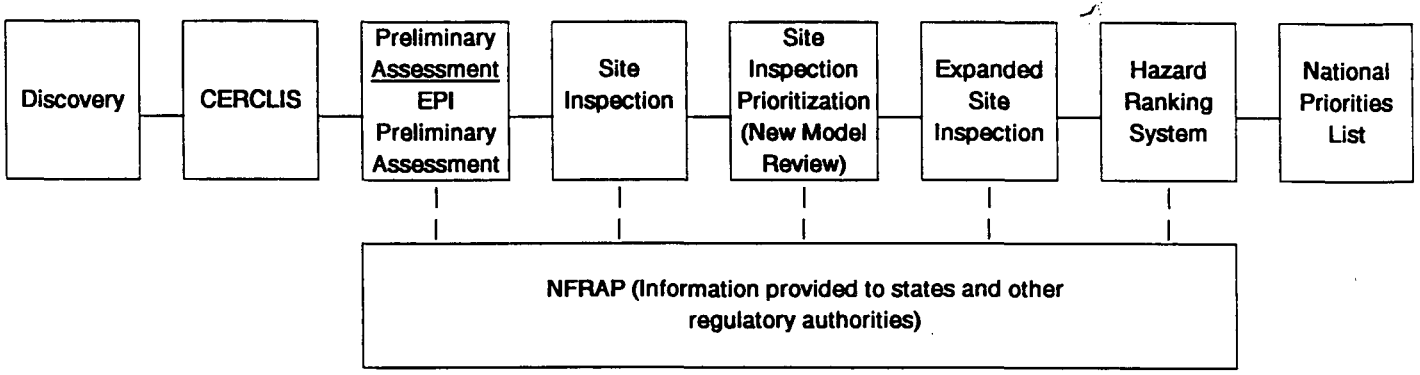
20. The reported value was greater than 3 times but less than 5 times the concentration of the analyte in the method blank. The presence of this analyte in the sample may be due to its "real presence" in the sample and/or laboratory contamination and the result is qualified.

21. The analyte is rejected because the absolute value in the initial and continuing calibration blank is not below the CRDL.

22. The non-detected metal value was qualified (UJ) because the spike recovery was between 30 and 74 percent. The detection limit for this metal could be elevated because of spike recovery.

ATTACHMENT 2

SUPERFUND SITE ASSESSMENT PROGRAM



SITE ASSESSMENT REPORTS

1. PRELIMINARY ASSESSMENT
   - * Quick Review of Readily Accessible Records and Reports
   - * Undertaken to Determine the Existence of a Problem and the Need for Further Action at a Site by Characterizing:
     - Magnitude of the Hazard
     - Source and Nature of the Release or Potential Release
     - Identification of Targets
   - * Does Not Include Sample Collection
2. SITE INSPECTION
   - * The Purpose of the Site Inspection is to:
     - Further Define and Characterize the Problem
     - Provide Data for the Hazard Ranking System (HRS) Scoring and Compute Initial Score
     - Identification of Targets
     - Determine the Necessity of Further Action
   - * The Site Inspection Involves an On-Site Visit and Sampling (10+/- Samples)
   - * A Site Inspection is not an Extent of Contamination Study
3. SITE INSPECTION PRIORITIZATION
   - * Quick Review of Readily Accessible Records and Reports
   - * Undertaken to Determine the Validity and Update Background Conditions Under the New HRS Model, and the Need for Further Action at a Site by Characterizing:
     - Magnitude of the Hazard
     - Source and Nature of the Release or Potential Release
   - * Included On-Site Visits or Sample Collection as needed
     - Analyze Samples/Limited Analytical Resources
     - Account for Significant Safety Hazards On-Site
4. EXPANDED SITE INSPECTION

   A Follow-Up Inspection May Be Recommended After the SI To:
   - * Gather Additional Data Necessary to Strengthen or Substantiate the Initial HRS Score
     - Geophysical Surveys
     - Installation of Groundwater Monitoring Wells
     - Additional Sampling

Review of Analytical Data

If previous analytical data are available, they should be reviewed for information which supports the design of the sampling and analysis program, tests site hypotheses, and documents the site score. The SI investigator should review all previous analytical data. While analytical data collected for other purposes may not meet SI objectives, site-specific analytical data are generally helpful in better understanding the nature of the problem at the site, regardless of data sources or data quality. The depth of the review depends on the overall quality and quantity of data, the intended use of the data, and whether they are representative of current site conditions and comparable to SI data. Determining whether available data can be applied as SI-generated data requires the professional judgement of an experienced reviewer. Both validated and non-validated analytical data may be available. Previous SI data will be validated and of CLP-quality. Non-validated data may contain false positives and false negatives, as well as quantitation, transcription, and calculation errors. If data of unknown or questionable quality are used for decision-making, the investigator should review all available information to assess the level of certainty associated with the data. If these data are used for HRS documentation, data validation will be necessary. The investigator should be able to determine the general quality of the data set by reviewing QC data for evaluation under the Superfund Program.