OFF-SITE SOURCE EVIDENCE

PRELIMINARY REMEDIAL INVESTIGATION REPORT

FOR

THE KENMARK TEXTILES SITE

FARMINGDALE, NEW YORK

FOR

COMPLIANCE WITH USEPA ADMINISTRATIVE ORDER ON CONSENT

RI/FS INDEX NO. II CERCLA-10204

PREPARED FOR

SJ&J SERVICE STATIONS, INC.

DECEMBER, 1993

fanning, phillips & molnar
ENGINEERS
RONKONKOMA NEW YORK

SECTION 1.0
INTRODUCTION

1.1 Purpose of Report

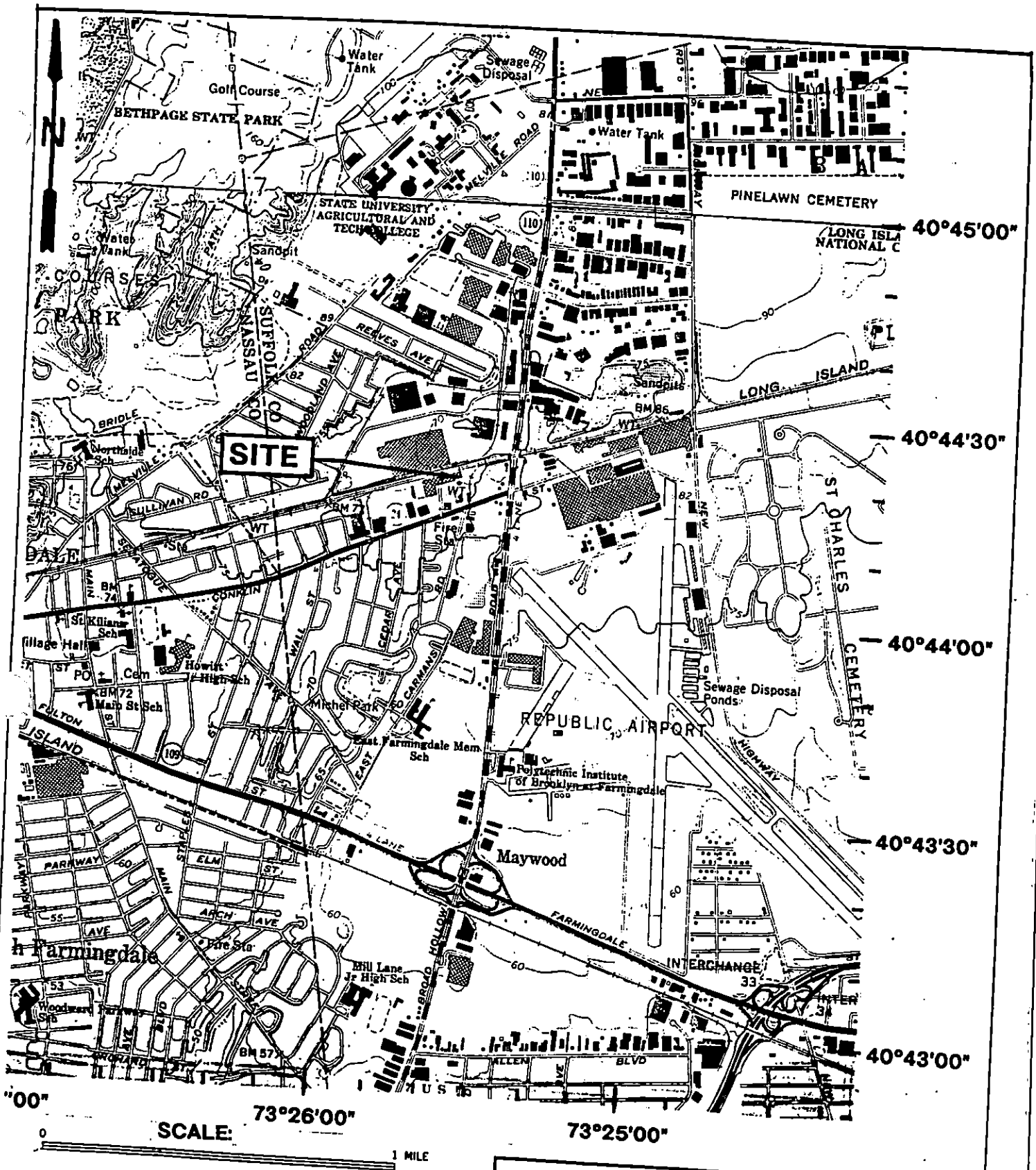
This Remedial Investigation Report documents the results of the Remedial Investigation/Feasibility Study (RI/FS) work plan conducted by Fanning, Phillips and Molnar (FP&M) at the Kenmark Textiles Corporation site in Farmingdale, NY (the "Site"). The RI was implemented in accordance with United States Environmental Protection Agency (USEPA) Order on Consent # 10204. It consisted of a field sampling program outlined in Fanning, Phillips and Molnar's Sampling and Analysis Plan (SAP), which included the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP). The data from the soil, sediment, and groundwater sampling were validated as per guidelines set forth by USEPA Region II. The validated data was used to determine the presence of hazardous substances, or contaminants produced by prior operations at the Site.

This Remedial Investigation Report presents the results of the field investigation and sample analyses.

1.2 Background and Setting

1.2.1 Site Location

The Site is situated in a light industrial area and consists of an industrial facility located at 921 Conklin Street in the Town of Babylon, New York (see Figure 1.2.1.1 for Site location). The areas north and east of the Site are also characterized by light industry (including Fairchild Republic, which is located within one-half mile of the Site). Residential developments are located to the south and west, with an estimated 6,200 residents living within a one-mile radius of the Site. The other notable feature evident on Figure 1.2.1.1 is the artificial (man-made) pond located 0.2 miles south of the Site. The area occupied by this pond was originally a sand and gravel mining



source U.S.geological survey 7.5 minute topographic maps (Huntington 1979 and Amityville, 1979 quadrangles)

Fanning, Phillips & Molnar
Engineers

FIGURE 1.2.1.1
SITE LOCATION

Drawn By: H.C.	Checked By: T.D.	Date: 1/6/93

operation. It was subsequently used as an industrial effluent recharge basin by industries on the Fairchild Republic property and a highway runoff recharge basin by New York State Department of Transportation. It is the subject of a separate New York State Department of Environmental Conservation (NYSDEC) Superfund investigation.

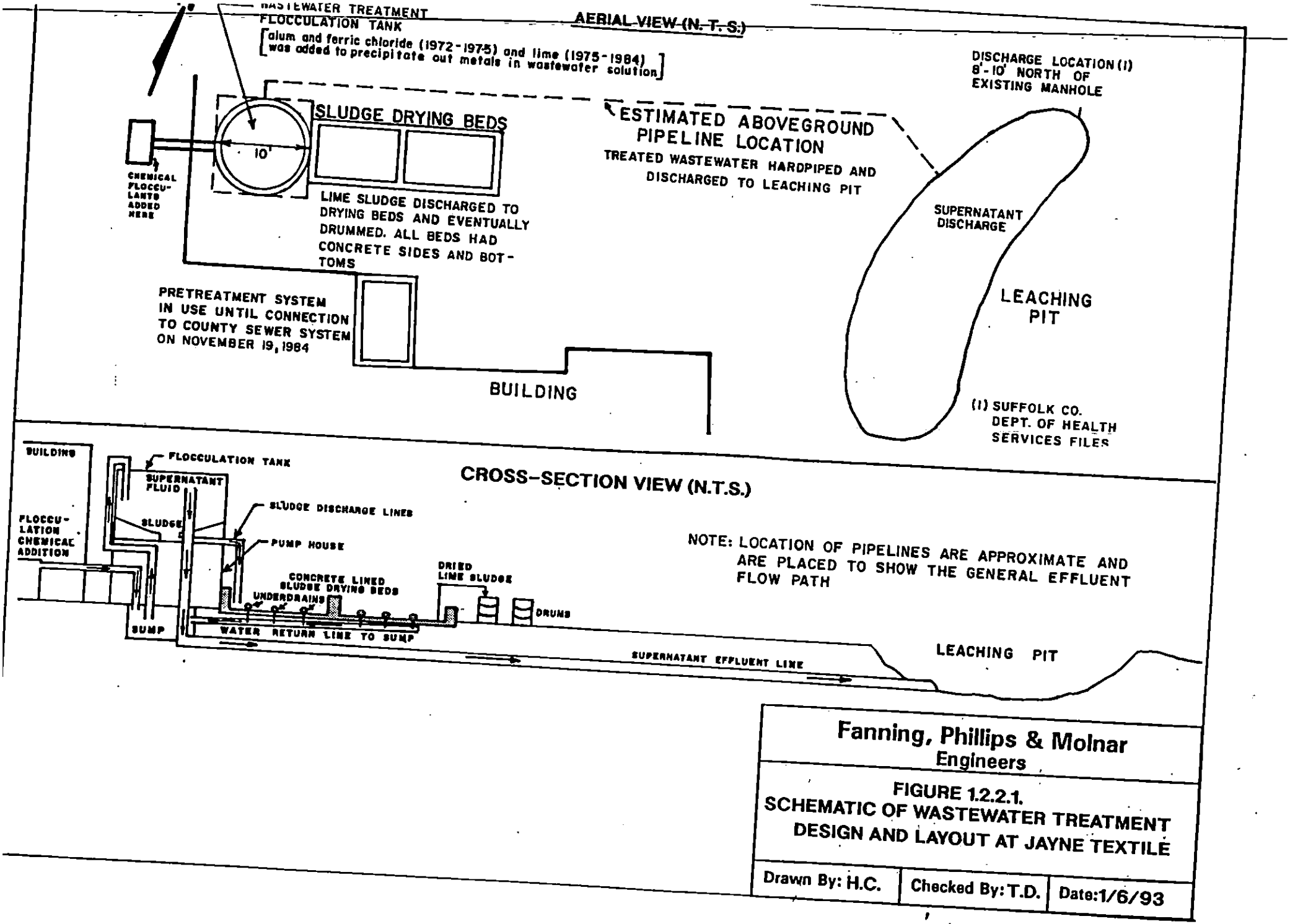
1.2.2 Site History

The Site has been the location of several textile screening and dyeing operations since 1914. The Independent Silk Dyeing Company, Inc., later the Independent Textile Dyeing Company, Inc. (Independent Textile), conducted silk and textile screening operations at the Site from 1914 until the company's dissolution in 1958. During the period that Independent Textile conducted operations at the Site, the company allegedly discharged wastewater into a leaching pit which was located at the Site.

In 1958, Independent Textile sold the Site property to B.G.M. Products, Inc., which in turn sold two parcels of Site property to Joseph Picone in September, 1972. The remainder of the Site property had been sold by B.G.M. Products, Inc. to three individuals in 1964, which following a series of transactions, was purchased by Irwin Schoffman and Brent Associates, Inc. in 1968.

Following the dissolution of Independent Textile in 1958, textile screening and dyeing operations at the Site ceased until approximately 1972, at which time the Jayne Textile Printing Corporation (Jayne Textile) began conducting screen and textile printing operations at the Site. Figure 1.2.2.1 depicts the level of treatment that the effluent stream received and the general flow path of each component during the period of Jayne Textile's operations.

Wastewater generated during the course of Jayne Textile's operations was pumped from a pretreatment tank located inside the main



Fanning, Phillips & Molnar
Engineers

FIGURE 1.2.2.1.
SCHEMATIC OF WASTEWATER TREATMENT DESIGN AND LAYOUT AT JAYNE TEXTILE

Drawn By: H.C.	Checked By: T.D.	Date: 1/6/93

building (where chemical flocculants were added) into a wet well (sump) located outside the main building. This sump was housed in a small building (pump house) which is still present at the Site. A flocculation (settling) tank was present on top of the building. Wastewater from the sump was pumped upwards into the settling tank. Alum and ferric chloride were added to the wastewater resulting in solids precipitating out of the wastewater which collected at the tank bottom. The supernatant liquid at the top of the tank was discharged through an underground pipe into a leaching pit 160 feet east of this tank. The sludge was discharged into sludge drying beds that were concrete lined on the bottoms and sides. The sludge drying beds had an underdrain system of porous pipe to draw off excess water from the sludge and discharge it back into the sump.

As early as 1972, Jayne Textile used the on-site sludge drying beds and leaching pits as depositories for sludge and wastewater generated during its industrial processes. The sludge drying beds and leaching pits are evident in the 1976 aerial photograph in the USEPA Historical Site Analysis report (Reference 1). The residual sludge from the settling tank, which was placed in sludge drying beds for final dewatering, was periodically removed from the drying beds and placed in drums. These drums were stored on the Site, south of the main building (see Figure 1.2.2.2 for site layout). The drums were subsequently removed from the Site.

The supernatant liquid flowed from the flocculation tank to the on-site leaching pit (shown east of the building in Figure 1.2.2.2) through an underground pipe reported to be metallic. A PVC pipe was uncovered in the vicinity of the suspected metal pipe during the Fanning, Phillips and Molnar 1990 RI. This pipe was also found exposed in the leaching pit wall.

The leaching pit was enlarged to approximately its present size from a previously existing smaller pit around 1972. The 1972 and 1976 aerial photographs in the EPA Historical Site Analysis (Reference 1) show that this pit had a dividing wall resulting in two separate pits within this pit area. Several correspondence regarding the site that refers to multiple pits may be referring to this pit with the dividing wall rather than two separate pits (i.e., NYSDEC Memorandum dated June 24, 1987 to Anthony Candela from Christopher Magee).

A recent interview with an employee at the Site (Reference 2) indicated that the only effluent line that he had knowledge of was of PVC construction. This employee has been at the Site since the mid-1970's. The USEPA personnel present also questioned this employee on an issue regarding the outside area where the wastewater treatment occurred as discussed in a NYSDEC Memorandum dated June 24, 1987. One issue was a 1972 Suffolk County Industrial Waste Inspection report that claimed that condensate from the steam cooker was discharged to the ground surface in the area behind the building. The employee stated that the condensate, to his knowledge, always went into the wash process tanks and that the reference to the discharge to the outside area may refer to the steam relief valve discharge line on the steam cooker which discharged clean steam prior to opening the cooker door. The area where this discharge occurred was sampled in 1988 and was identified as HB-10.

According to a 1974 State Pollutant Discharge Elimination System (SPDES) permit application filed by Jayne Textile with the NYSDEC, wastewater generated by Jayne Textile at the Site may have contained cyanide, cadmium, chromium, copper, lead, and phenols.

In September, 1974, Jayne Textile was notified by NYSDEC that the company was in violation of the New York State Environmental Conservation Law for discharging industrial wastewater into the

groundwater without a permit.

On November 1, 1974, Jayne Textile entered into an Administrative Order on Consent with NYSDEC which established a time schedule for the implementation of a wastewater treatment system. This Order on Consent was binding on any new corporations which would assume the facility's operations at the Site. Jayne Textile ceased operations at the Site before the terms and provisions of the Order on Consent were fully complied with.

In 1975, Jayne Textile reorganized into the Kenmark Textile Printing Corporation (Kenmark). The wastewater treatment procedures used by Kenmark at the Site were essentially the same as those used by Jayne Textile, except that Kenmark used lime rather than alum and ferric chloride to treat wastewater generated at the facility. Kenmark also allegedly discharged the supernatant liquid to leaching pits located in the northeast corner of the Site in the same manner as described for the period of time (1972-1975) during which Jayne Textile operated the facility. The leaching pits used at the Site were unlined, thereby permitting alleged wastewater discharges to seep into the surrounding soil. The 1972 and 1976 aerial photos in Reference 1 indicate that the pits were located within one large excavation pit that had a low dividing wall. It is assumed that this is what the various correspondences that refer to multiple pits are describing. The 1972 photo shows this area to contain the only pits present within the vicinity of the Site.

Sampling conducted between January, 1974, and May, 1984, by the Suffolk County Department of Health Services (SCDHS) and Lakeland Engineering, a contractor hired by Kenmark Textile, revealed that the wastewater discharged into the on-site leaching pits contained hexavalent chromium, copper, iron, lead, silver, and phenols at levels

in violation of New York State GA groundwater effluent standards (see Table 1.2.2.1).

In 1985, NYSDEC's Mobile Analytical Laboratory obtained soil samples from various locations around the Kenmark Textile facility. Soil samples taken from the facility's pump house basin (sump), leaching pits and sludge drying beds allegedly contained elevated levels of copper, chromium, lead, zinc, silver, and arsenic. No volatiles, pesticides, PCBs, base/neutral or acid extractables were detected in this Phase II NYSDEC sampling event.

Kenmark Textile allegedly stored approximately fifty drums of sludge at the Site for a period of at least five years. Analyses performed on the stored sludge by Lakeland Engineering, a contractor hired by Kenmark, revealed the presence of silver.

Kenmark was notified on numerous occasions by NYSDEC and SCDHS (formerly known as Suffolk County Department of Environmental Control - SCDEC) that the company was allegedly in violation of several state and county laws regulating the discharge and storage of hazardous substances and industrial wastes. Several Consent Decrees and modified Consent Decrees were entered into with NYSDEC, and various effluent limitations and compliance schedules were established in a draft SPDES permit issued to Kenmark Textile by the State of New York.

In 1980, Joseph Picone sold his property at the Site to SJ&J Service Stations, of which he is president.

In May, 1983, Irwin Schoffman and Brent Associates, Inc. sold two parcels of Site property to 937-941 Conklin Street Associates. In 1985, these two parcels were sold by 937-941 Conklin Street Associates to harles Selig who, in 1989 or 1990, resold this property to 937-941 Conklin Street Associates.

In January, 1984, Irwin Schoffman and Brent Associates, Inc. sold

TABLE 1.2.2.1
SUMMARY OF CHRONOLOGICAL WASTEWATER DISCHARGE ANALYSIS
BY S.C.D.H. (1) AND LAKELAND ENGINEERING (2)
KENMARK TEXTILES SITE - FARMINGDALE, NEW YORK

Point of Sampling	Metal Parameters with One or More Readings over State GA Effluent Standards	Other Parameters with One or More Reading over State GA Effluent Standards
Supernatant Discharge to Leaching Pit	Chromium (Hexavalent) (5/20) Copper (2/10) Iron (17/24) Lead (2/13) Silver (1/10)	Phenol (2/2) pH (26/31) C.O.D. (22/22) MBAS (11/20) (3/5) Dissolved Solids (21/23) Suspended Solids (1/14) Chloride

Note: (2/12) equals number of readings over GA State Standards/per total number of readings.

(1) Analysis over period from January, 1974 - May, 1984

(2) Analysis over period from September, 1979 - September, 1981

one lot of property at the Site to Brent Conklin, a co-partnership of Brent Associates, Inc., Irwin Schoffman, and Jacob and Ruth Kogel.

In January, 1985, Kenmark sold its business to its employees, who changed the company's name to The Susquehanna Textile Company, Ltd. (Susquehanna Textile).

In May, 1986, NYSDEC drafted consent orders for Susquehanna Textile and SJ&J which provided for, among other things, investigation of the "existing, current and/or potential releases or migration" of hazardous wastes from the Site and the development of a remedial program designed to address this contamination. The Site was defined as the property upon which the Susquehanna Textile facility is located, and SJ&J entered into the Consent Order with the State. Pursuant to the Consent Order, SJ&J hired Fanning, Phillips and Molnar to prepare a RI/FS Sampling Plan and Sampling Report for the Site (Reference 3).

On November 19, 1984, Kenmark was connected to the Suffolk County Southwest Sewer District enabling it to discharge its wastewater directly into the sewer system.

The Fanning, Phillips and Molnar RI Sampling Report (Reference 4) was completed for the Susquehanna Textile facility in June, 1990. The sampling results revealed concentrations of copper, zinc, chromium, silver, arsenic, lead and volatile organic compounds (VOCs) in the soils. VOCs, including chloromethane and tetrachloroethene, were detected in the groundwater at the Site, at levels above Federal and State groundwater standards. However, chloromethane was also detected in the trip blank (see Figure 1.2.2.3 for sampling locations). According to the RI Sampling Report (Reference 4), groundwater samples collected from monitoring wells at the Site revealed lead and VOC contamination in excess of New York State and Federal groundwater standards.

The potential pathway of contamination by metals is downward movement of the metals through the vadose zone as a solute, due to recharge water from rain. Metals in solution which reach the groundwater will move with the groundwater in the direction of groundwater flow (generally south).

An air pathway analysis was performed as part of the risk assessment and is included in that document. The pathway of overland runoff of metals as solutes after rain events has been determined to be insignificant due to pavement on the Site and the high soil permeability (and the lack of significant topographic gradients in the Site area).

VOCs may enter the groundwater from the vadose zone in the same manner as metals. VOCs may also be present in a gaseous state and migrate within the vadose zone or off-gas into the atmosphere or building. However, since VOCs are not known to have been discharged since 1986, and since an OVA headspace analysis was performed in the soils at over 50 locations throughout the Site and significant concentrations of VOCs were not detected, significant quantities of off-gassing VOCs are unlikely.

Metals and VOCs that migrate from the vadose zone to the groundwater will travel generally south at a velocity equal to the groundwater pore velocity, if the analyte exhibits conservative movement (such as chloride) or much less than the groundwater velocity, if the analyte exhibits non-conservative movement (such as potassium).

5.2 Contaminant Migration

There are minor levels of organic contaminants present in the soils and groundwater at the Site. There are no detectable levels of organic contaminants off-gassing from the soil to the atmosphere at the Site.

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE 1 INVESTIGATION

Target Rock Corporation
Site No. 152119
Town of Babylon, Suffolk County
Final -May, 1988

Prepared for:
New York State
Department of
Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, Commissioner
Division of Hazardous Waste Remediation
Michael J. O'Toole, P.E., Director

Prepared by:
Roux Associates, Inc.
Subcontractor to:
Gibbs & Hill, Inc.

1. EXECUTIVE SUMMARY

The Target Rock site (New York ID No. 152119) is an active machine shop located in East Farmingdale, Suffolk County, New York. The total complex is eleven acres in area. The east building is on five acres, as is the west building, plus a one acre right-of-way. Target Rock Corporation is owned by Curtiss-Wright Corporation of Lynhurst, New Jersey. Target Rock is situated on land currently deeded to the Suffolk County Industrial Development Agency. The site lies on the west edge of an industrial area in East Farmingdale. There is a residential area immediately west and southwest of the site. Bethpage State Park is less than 1/2 mile west of Target Rock Corporation.

The Suffolk County Department of Health Services (SCDHS) confirmed that between mid 1982 and September 1983 waste water containing solvents was being discharged from the east Target Rock building into a drywell on-site. During an April 1982 SCDHS inspection of Target Rock (Appendix A-3, A-4), it was also noted that numerous leaking drums were also present. Soil sample analyses (by the Suffolk County Department of Health Services) showed that drywells in the drum area had been contaminated. One or more cesspools on-site were also contaminated. Chemicals that were detected

include 1,1,1 trichloroethane, freon, xylenes, methylene chloride, tetrachloroethylene, N-decane and undecane (Appendix A-4 through A-9).

The Suffolk County Department of Health Services ordered Target Rock to pump-out the drywells and cesspools, to discontinue the discharge of waste water and to berm the drum storage area (Appendix A-10). All of these tasks were completed in September/October 1983. Target Rock now collects waste water in 2 large (2000-gallon capacity) stainless steel tanks and has the waste taken away for disposal by Bay Shore Environmental, a private waste scavenger/hauler (Appendix A-16).

The drywell, in which the waste water was being disposed of, was removed in October 1983. According to the Plant Engineer, the surrounding soil was also removed until the sand was visibly clean. The hole was then filled with clean sand. This same spot was again excavated a few months later in order to construct the housing for the permanent collection tanks.

The preliminary HRS Scores for this site are as follows: Migration Score (S_M) = 35.60, Ground Water Score (S_{gw}) = 61.54, Surface Water Score (S_{sw}) = 2.24, Air Score (S_a)=0

and Direct Contact Score (S_{DC})=0. The Fire and Explosion section was not scored due to the fact that the site visit did not document a demonstrated fire or explosion threat.

Based on the reported discharge of solvents, and the apparent direct pathway to the water table, ground-water contamination is possible at this site. No ground-water monitoring has been done at this site to confirm this possibility.

It is recommended that a Phase II Investigation be done at this site to determine if there is ground-water contamination, and its extent. The area is densely populated and there are approximately 30 high volume public-supply wells within a three mile radius of the site. All drinking water in this area is taken from ground water and the majority comes from the aquifer of concern.

4. SITE ASSESSMENT

4.1 Site History

Target Rock Corporation, a subsidiary of Curtiss-Wright Corporation, is a machine shop that manufactures and tests valves. It was purchased by Curtiss-Wright Corporation near the end of June 1981 and commenced machine shop operations by early 1982. The Suffolk County Department of Health Services file indicates that leaking drums and the discharging of industrial waste water into storm drains has been evident at Target Rock since spring of 1982 (Appendix A-4 thru A-9).

An inspection by the Suffolk County Department of Health Services on April 13, 1982 (Appendix A-2 and A-3) revealed that there were "numerous drums leaking and running into storm drains". This drum storage area is located on the east side of the east building (Appendix A-1). Contents of the drums included oils, freon, solvents (1,1,1 Trichloroethane, Tetrachloroethylene, etc.), acetone, kerosene and unknowns.

On May 4, 1982 Suffolk County took samples from a storm drain located adjacent to a PVC pump-out pipe. The results

of analysis found 1,1,1 trichloroethane (65 ppb) and freon 113 (43 ppb) (Appendix A-4). Both of these exceeded ground-water effluent standards. These were detected again during July and August 1982 (Appendix A-5 through A-9) and, along with several other chemicals, the detections were at even higher concentrations. On July 27, 1983 the concentration of 1,1,1 Trichloroethane was detected at 43,000 ppb and the Tetrachloroethylene concentration was detected at 2300 ppb. Nine other compounds were also detected in concentrations above the ground-water effluent standards.

During the site visit by Roux Associates (June 24, 1987), Mr. Squittiere, the Plant Engineer, explained which waste was being discharged into the drywell. The waste comes from a process which Target Rock calls non-destructive testing. Valves are flood-washed with water containing the solvent 1,1,1 trichloroethane to clean the surface. Dye penetrant is then used on the valves to reveal any cracks in the metal. The waste water from this procedure was discharged into a drywell for about a year (mid 1982 until September 1983).

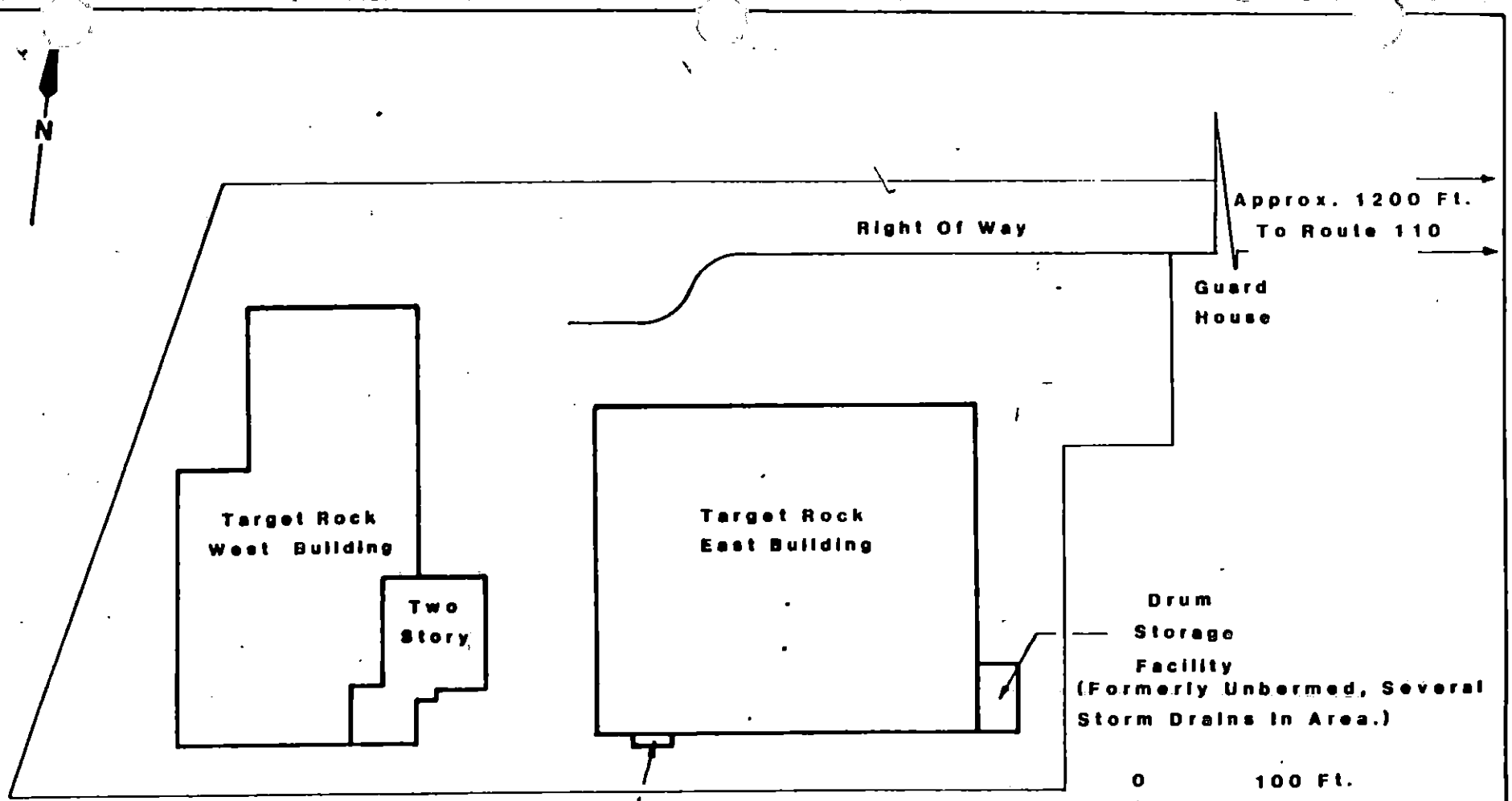
The Suffolk County Health Department ordered Target Rock to stop discharging to the drywells, and to pump out the

drywells/leaching pools, etc. (Appendix A-10). DeVito Cesspool (Bayview Environmental Services) was hired by Target Rock to accomplish this (Appendix A-11, 12). Target Rock was fined for violating Article 12 of the Suffolk County Sanitary Code (Appendix A-13, 14, 15).

Temporary storage tanks were employed while the drywell was being excavated and removed. Two permanent 2000-gallon stainless steel tanks were then installed on the south side of the east building where the drywell originally was. The waste water, about 2000 gallons per month, is currently picked up by Bay Shore Environmental Services.

During the fall of 1983 the drum storage area was roofed and bermed (Appendix A-16). The storage tanks and drum storage area have been inspected and approved by the Health Department.

During an inspection by the SCDHS on September 17, 1985 it was noted that four drains located in the vicinity of acid and caustic storage tanks may also be routes for ground water contamination (Appendix A-20). The Health Department instructed Target Rock to permanently seal these drains with concrete (Appendix A-20). The Plant Engineer (July 15, 1987) confirmed that these drains had been plugged years ago



TITLE

BASE MAP
TARGET ROCK CORP.

PREPARED FOR

N.Y.S.D.E.C.

ROUX ROUX ASSOCIATES INC

SCALE SHOWN

DATE 8/87

FIGURE 2

and inspected (Appendix A-17).

Target Rock was recommended to be placed on the Inactive Hazardous Waste Disposal Site Registry by Region I of the DEC on April 28, 1986 (Appendix-21). The site report is located in Appendix A-22 through A-25. No ground-water monitoring has been done at this site and the ground water is likely to be affected due to the high levels of organics that have been discharged at this site.

4.2 Site Topography

The site lies on flat ground at an elevation of approximately 75 feet above sea level (Slope = 0). The surrounding area slopes toward the southeast at less than 3 degrees. Higher ground is found about 0.5 miles to the northwest in Bethpage State Park where the elevation rises to approximately 125 feet above sea level. The site is located on a glacial outwash plain which regionally slopes to the south. The closest natural body of surface water is Massapequa Creek, which begins 2.5 miles to the southwest of the site and flows to the south, ultimately emptying into the Great South Bay.

Reference: USGS, 1969 and 1979; see Figure 1.

4.3 Site Hydrogeology

The Target Rock Corporation site, located in East Farmingdale, New York, is underlain by Quaternary glacial fluvial deposits. The water table lies approximately 25 feet below the surface. In this area ground water flows from north to south.

The Upper Glacial Aquifer extends to a depth of 130 feet below sea level (approximately 180 feet thick). This Pleistocene formation consists of undifferentiated outwash deposits of sand and gravel with moderate to high permeability.

Below the Upper Glacial Aquifer is the Magothy Aquifer which is Upper Cretaceous in age. The Magothy formation (within the Matawan Group) is composed of sand, silt and clay. This aquifer is about 585 feet thick. Locally, there is no confining layer between the Upper Glacial Aquifer and the Magothy Aquifer so these two aquifers are considered to be hydraulically connected.

Beneath the Magothy Formation lies the Cretaceous Raritan Formation which consists of the Raritan Clay member and the Lloyd Sand member. The clay is a confining unit,

approximately 175 feet thick, which separates the Upper Glacial and Magothy Aquifers from the Lloyd Aquifer. The Lloyd Aquifer is approximately 320 feet thick at this location. The Lloyd sand member unconformably overlies Precambrian bedrock at about 1310 feet below sea level.

The aquifers of concern at this site are the Upper Glacial Aquifer and the Magothy Aquifer. These are sole source aquifers for Farmingdale and the surrounding area. It is estimated that over 100,000 people are served by public wells in this area.

Reference: Soren J., 1971. Long Island Water Resources Bulletin No. 1, Appendix A-29.

Jensen, H.M. and Soren, J. 1974. Hydrogeology of Suffolk County, Long Island, New York, Appendix A-30.

4.4 Site Contamination

Waste Types and Quantities

The waste water that was discharged into the drywell (located on the southeast corner of the east building)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	152119

II SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
Target Rock Corporation	1966E Broad Hollow Rd.				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG. DIST.
Farmingdale	NY	11735	Suffolk		
09 COORDINATES LATITUDE	LONGITUDE				
40° 44' 43"	73° 25' 47"				

10 DIRECTIONS TO SITE (Starting from nearest public road)

Long Island Expressway to exit 49 south. Continue south on 110; make right immediately after Roy Rogers on right hand side. Continue straight back to guar booth.

III RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)		
Curtiss-Wright Corporation	1200 Wall Street West		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Lyndhurst	NJ	07071	( )
07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)		
Daniel Pattarini, President	1966 E. Broad Hollow Road		
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
E. Farmingdale	NY	11735	516 293-3800

13 TYPE OF OWNERSHIP (Check one)
X A PRIVATE ☐ B FEDERAL _____ (Agency name) ☐ C STATE ☐ D COUNTY ☐ E MUNICIPAL
☐ F OTHER _____ (Specify) ☐ G UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A RCRA 3001 DATE RECEIVED _____ (Month Day Year) ☐ B UNCONTROLLED WASTE SITE (CERCLA 103c) DATE RECEIVED _____ (Month Day Year) ☐ C NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
X YES DATE 6/24/87 (Month Day Year)
☐ NO

BY (Check all that apply)
☐ A EPA ☐ B EPA CONTRACTOR ☐ C STATE X D OTHER CONTRACTOR
☐ E LOCAL HEALTH OFFICIAL ☐ F OTHER _____ (Specify)

CONTRACTOR NAME(S): .

02 SITE STATUS (Check one)
☐ A ACTIVE ☐ B INACTIVE ☐ C UNKNOWN

03 YEARS OF OPERATION _____ (Beginning Year) _____ (Ending Year) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN OR ALLEGED

Waste water containing industrial solvent (1,1,1 trichloroethane) and dye penetrant were dumped into a drywell.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND OR POPULATION

Possible ground-water contamination

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. Complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A HIGH (Inspection required promptly) ☐ B MEDIUM (Inspection required) X C LOW (Inspection on a routine basis) ☐ D NONE (No inspection needed)

VI INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)		03 TELEPHONE NUMBER
J. Yeary/J. Byrnes	Roux associates		516 673-7200
04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
J.Yeary			( )	6/24/87 (Month Day Year)

EPA FORM 2070-12 (7-81)

LAB NO. [illegible] A-7
REC'D 7-27-83 PA
FIELD NO. [illegible]

DATE COMPLETED 8-24-83
EXAMINED BY [illegible]

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
DIVISION OF MEDICAL LEGAL INVESTIGATIONS & FORENSIC SCIENCES
PUBLIC HEALTH LABORATORY

TRACE ORGANIC ANALYSIS OF INDUSTRIAL WASTE

Name TARGET ROCK CORPORATION

Location 966 E. MAIN ST. RT 25A FARMINGDALE

Point of Collection INDUSTRIAL DRAIN SOUTHWEST CORNER OF EAST BUILDING (CLOSED AREA)

Remarks:

Compound	ppb	Compound	ppb
Methylene Chloride	54	Benzene	<10
Freon 113	<4	Toluene	32
Chloroform	<5	o-Xylene	—
1,1,1 Trichloroethane	43,000	m,p-Xylene	—
Carbon Tetrachloride	<1	Xylenes	140
1,1,2 Trichloroethylene	<5	Chlorobenzene	<12
Chlorodibromomethane	<2	Ethylbenzene	13
Tetrachloroethylene	2300	Chlorotoluenes	<12
Bromoform	<5	1,3,5 Trimethylbenzene	55
Bromodichloromethane	<3	1,2,4 Trimethylbenzene	220
1,1,2 Trichloroethane	<5	m,p Dichlorobenzene	<14
s-Tetrachloroethane	<3	o-Dichlorobenzene	<14
n-Decane	320	p-Diethylbenzene	120
Undecane	580	p-Ethyltoluene	76
Dodecane	—	1,2,4,5 Tetramethylbenzene	140
n-Tridecane	—	Octane	<40
Brombenzene	<16	n-Nonane	48

During transport of the sample from collection point to laboratory, the chain of custody must not be broken. The sample should be delivered by the sample collector or a designated representative who will sign for the receipt, integrity and transfer of the sample during shipment.

	SIGNATURE	AFFILIATION	DATE	TIME
1. Collected by	[signature]	SCDHS	7-27-83	10:15 A.M.
2. Transfered to	[signature]	SCDHS-DLL	7-27-83	10:50 A.M.
3. Transfered to				
4. Transfered to				

Lat No. IW-8820
Field No. LEJ 8-18
Date 8-18-82
Time 11 AM
Col. By JOUNGBLOOD
(Name not Initials)

Received in Lab 8-18-82 1:05PM
Public Water
Private Water
Other
Date Completed
Examined By

SUFFOLK COUNTY DEPARTMENT OF HEALTH SERVICES
DIVISION OF MEDICAL LEGAL INVESTIGATIONS & FORENSIC SCIENCES
PUBLIC HEALTH LABORATORY

TRACE ORGANIC ANALYSIS OF WATER

CO24 TO 305

Name TARGET ROCK CORP. Owner or District

Location 1666 E. BROADHOLLOW RD, E. FARMINGDALE

Point of Collection DRY WELL BEHIND PLANT
Remarks: NEAREST TO END OF PVC piping

BTX + VHO

	Compound	ppb		Compound	ppb
188	Methylene Chloride		250	Benzene	<10
190	Bromochloromethane		251	Toluene	<10
223	1,1 Dichloroethane		254	o-Xylene	<10
229	Trans Dichloroethylene		252	m-Xylene	<10
230	Chloroform	<5	253	p-Xylene	<10
224	1,2 Dichloroethane		255	Xylene (s)	
232	1,1,1 Trichloroethane	9	258	Chlorobenzene	<10
234	Carbon Tetrachloride	<1	259	Ethylbenzene	<10
394	1 Bromo-2-Chloroethane		257	Bromobenzene	<10
435	1,2 Dichloropropane		266	o-Chlorotoluene	<10
110	1,1,2 Trichloroethylene	<5	267	m-Chlorotoluene	<10
103	Chlorodibromomethane	<2	268	p-Chlorotoluene	<10
396	1,2 Dibromoethane		265	Chlorotoluene (s)	
420	2-Bromo-1-Chloropropane		415	m-Dichlorobenzene	<10
101	Bromoform	<5	412	o-Dichlorobenzene	<10
111	Tetrachloroethylene	6	413	p-Dichlorobenzene	
108	Cis-Dichloroethylene		418	1,2,4 Trimethylbenzene	<10
210	Freon 113	62	406	1,3,5, Trimethylbenzene	<10
191	Dibromomethane		322	2,3 Dichloropropene	
112	1,1 Dichloroethylene		409	1,1,1,2 Tetrachloroethane	<5
11	BromoDichloromethane	<5		1,2,2,2 Tetrachloroethane	
	1,3 Dichloropropane				<5
	1,3 Dichloropropene		295	1,1,1,2 Tetrachloropropane	
	Trans dichloropropene				

NOTICE OF VIOLATION

COUNTY OF SUFFOLK

PETER F. COHALAN
SUFFOLK COUNTY EXECUTIVE

...ENT OF HEALTH SERVICES

Date August 29, 1983
SPDES NO.
Lab. No. IW-783032
Field No. 6 EJ 7-27

...t Rock Corp.
...E. Broadhollow Road
...ville, New York 11735

...:

...ly 27, 1983 samples of industrial waste were taken from your ...trial cesspool on the SW corner of East Building (iron cover). ... analysis, the following parameters were found in concentrations above ... mum allowed in your SPDES Permit or in groundwater effluent ...:

1.	...ylene Chloride	54 ppb	6.	Xylenes	140 ppb
2.	...,1,1 Trichloroethane	43,000 ppb	7.	1,3,5 Trimethylbenzene	85 ppb
3.	...chloroethylene	2,300 ppb	8.	1,2,4 Trimethylbenzene	220 ppb
4.	...luene	320 ppb	9.	p-Diethylbenzene	120 ppb
5.	...ene	500 ppb	10.	p-Ethyltoluene	76 ppb
			11.	1,2,4,5 Tetramethylbenzene	140 ppb

...e advised that these unsatisfactory conditions constitute viola... of the N.Y.S. Environmental Conservation Law and/or the Suffolk ... Sanitary Code. Please be further advised that the discharge of ... from an industrial process to the groundwater of Suffolk County ... having first obtained a State Pollutant Discharge Elimination ... (SPDES) Permit for that discharge is also a violation of the N.Y.S. ... and/or the Suffolk County Sanitary Code, Article 12.

... do not already possess a valid SPDES Permit for the above discharge, ... you should apply immediately through this office for said permit.

... the above-noted violations may subject you to legal action, it is ... that these violations cease immediately. Violations of the ... County Sanitary Code are subject to the imposition of a civil ... of up to Five Hundred ($500) dollars per violation. E.C.L. ... are also subject to a civil penalty. A reinspection in the ... will determine your compliance in this matter.

... truly yours,

... Finkenberg, Sr. Sanitarian
... Pollution Control

... Pl.
... 11738

(SEE REVERSE SIDE FOR STANDARDS)

A-10

COUNTY OF SUFFOLK

PETER F. COHALAN
SUFFOLK COUNTY EXECUTIVE

David Harris, M.D., M.P.H.
Commissioner

...ENTAL HEALTH SERVICES

...ock Corp.
...Broadhollow Road
...ingdale, New York 11735

August 29, 1983

CERTIFIED MAIL.

...an:

...July 27, 1983 samples taken from your industrial cesspool on the ...corner of East building (iron cover) ...collected by a representative in this Department. The laboratory ...lysis performed by this Department revealed that

...numerous ogranic chemicals have been discharged to this leaching pool ...enclosed report dated August 29, 1983)

...to the excessive nature of this discharge, you are directed to ...these leaching pools/ holding tanks/ storm drains pumped of all ...liquids and sludge by an approved industrial waste scavenger. A list ...approved scavengers may be obtained by calling James Heil, P.E., ...New York State Department of Environmental Conservation, 751-7900.

...are also directed to notify this office when these pools are pumped ...that an inspector may witness this operation.

...you have any questions, please call me at 451-4635.

...ery truly yours,

...n I. Finkenberg
...ntal Pollution Control

...b

...E ... HAUPPAUGE, NEW YORK 11788 ... (516) 451-4633

A-26

ROUX ASSOCIATES, INC.

Telephone Conversation Sheet

Caller Dana Taylor (Lawyer for Target Rock)

Company Curtiss-Wright

Contact Joanne Yeary **Telephone #**

re ref. to drywell and site visit

DATE	COMMENTS
June 22,'87	Mr. Taylor said he met with the Target Rock people on Friday (June 19th). He has all the information on the cesspool of concern. Target Rock did have a drywell into which they used to dispose of waste liquids. The waste included dye penetrant and a type of industrial cleaning fluid with trichloroethane its main constituent. The dye penetrant consisted of a light weight oil and dye. This dye penetrant is used to reveal cracks in metal. The metal is first cleaned with the solvent before the dye penetrant is applied. He says these were disposed of into the drywell from the second half of 1982 until Sept. 1983; a period of about 10-14 months. When the Suffolk Co. Health Dept. found out, Target Rock was fined $500. In the few weeks following September 15th they stopped dumping these fluids and installed tanks to collect the waste, which is then shipped away. They dug up the drywell and excavated until the sand was visibly clean. He says this was inspected by S.C.D.H.S., but he has no record. The hole was then filled with clean sand. So since that time in 1983 the drywell has not existed. Mr. Taylor also says that Target Rock just hasn't gone through the paper work of being delisted from the Inactive Hazardous Waste Site list. We will meet at Target Rock Wednesday, June 24th for the site visit anyway.

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Target Rock Corporation Site No. 152119
Town of Babylon Suffolk County

DATE: May 1993

Report

Prepared for:

New York State Department of Environmental Conservation

50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., P.E., *Director*

By:

Lawler, Matusky & Skelly Engineers

4.1 SITE HISTORY

Target Rock Corporation began manufacturing and testing valves at the site in early [illegible] after the east building was purchased by Curtiss-Wright Corporation in mid-1981. Target Rock manufactures valves used primarily for nuclear applications.

The site was originally used as a sand and gravel bank. In 1972 the east building was built; it housed a J.C. Penney warehouse until Target Rock moved into the building in 1981. The exact date of construction of the west building is unknown. It was leased as office space by Target Rock, then purchased and expanded by 40,000 ft^2 in 1975.

Part of the valve manufacturing process involves nondestructive testing of the valves for minor cracks. This process involves cleaning the valves' metal surface by flood-washing them with water that contains up to 5% 1,1,1-trichloroethane. A dye with a high-penetrant oil base is then applied to the valves to reveal any cracks.

From mid-1982 until September 1983 the wastewater generated by the valve testing operation was discharged directly to a dry well located at the rear of the east building. The wastewater generated was reportedly less than 2000 gal per month. The reported concentration (5%) of 1,1,1-trichloroethane in the wastewater would classify this as an industrial waste discharge. To be classified as a hazardous waste discharge, the concentration would have to be 10% or greater (Ref. 10). The discharge to the dry well was discovered by the Suffolk County Department of Health Services (SCDHS) in early 1982 (Ref. 11). SCDHS also found a number of improperly stored and leaking drums along the eastern side of the east building. The drums contained a number of compounds, including oils, Freon, acetone, kerosene, 1,1,1 trichloroethane, tetrachloroethylene, and unknowns. These discoveries prompted several rounds of testing of both the dry well and the catch basins near the drum storage area.

4.5.3.2 *TAL Metals/EP Toxicity.* A number of metals were detected in the sample. When compared with typical concentrations found in native soils, the metals concentrations are all within natural ranges. Analysis of the EP toxicity metals indicated that all concentrations were below detection limits.

4.5.4 Groundwater Data

Groundwater samples collected from the four monitoring wells installed at the site were analyzed for TCL VOCs, SVOCs, and pesticides/PCBs; TAL metals and cyanide; COD; TSS; and TDS. The detected contaminants were evaluated against the NYSDEC Class GA groundwater standards. Table 4-2 summarizes the chemical data for the groundwater samples from the Target Rock site along with the NYSDEC Class GA standards. Natural ambient ranges for metals are included on the table. All validated analytical data are summarized and documented (Refs. 17A and 17B).

4.5.4.1 *Volatile Organic Compounds.* Of the four groundwater samples submitted for analysis, VOCs were detected at levels above the contract-required quantitation limit (CRQL) in two wells. The samples from TRMW-2 and -4 contained 43 and 66 µg/l of 1,1,1-trichloroethane, respectively. Both values are significantly above the NYSDEC GA standard of 5 µg/l. Several other chlorinated organic compounds were present below the quantitation limit in all the wells except TRMW-1. No tentatively identified compounds (TICs) were found in the groundwater samples. Methylene chloride and acetone were also found below the quantitation limit in all the samples, including associated field and trip blanks. It is believed the methylene chloride and acetone can be attributed to laboratory contamination and not actual contamination at the site.

4.5.4.2 *Semivolatile Organic Compounds.* bis(2-Ethylhexyl)phthalate was detected in all of the groundwater samples. This compound was found above the CRQL in TRMW-1 (18 µg/l), TRMW-3 (32 µg/l), and TRMW-4 (26 µg/l) and below the CRQL in TRMW-2 (3 µg/l). No other TCL SVOCs were detected above the CQRL in the four groundwater samples submitted for analysis.

the dry well. Whether there is any residual soil contamination outside the excavation area is unknown.

4.6.2 Groundwater

Groundwater samples taken from the four monitoring wells installed at the site revealed contamination with 1,1,1-trichloroethane in TRMW-2 (43 µg/l) and TRMW-4 (66 µg/l). The NYSDEC Class GA groundwater standard for 1,1,1-trichloroethane is 5 µg/l. The suspected source of the 1,1,1-trichloroethane in TRMW-4 is the former dry well. 1,1,1-Trichloroethane was the solvent found in the valve testing wastewater. The extent of any chlorinated solvent plume originating at the former dry well location is unknown. Based on the high concentrations of 1,1,1-trichloroethane released to the dry well and the groundwater velocity and direction, it is likely that the bulk of the original contamination has moved off-site.

The suspected source of the 1,1,1-trichloroethane in TRMW-2 is unknown. This contamination may be the result of solvent-contaminated wastewater being disposed of in the sanitary leach field in this area or spillage of solvents on the ground. The former dry well that received valve testing wastewater is an unlikely source of the contamination owing to the similar concentrations seen and the positions of TRMW-4 and -2 relative to the groundwater flow direction. The extent of any contaminant plume in the vicinity of TRMW-2 is unknown, but based on the groundwater flow direction and velocity, the contamination has likely moved off-site.

Only trace amounts of 1,1,1-trichloroethane (4 µg/l) were found in TRMW-3, along with a number of TICs at concentrations higher than at the upgradient well (TRMW-1). This would indicate that any spillage or leaks from the former drum storage area would have a minimal effect on on-site groundwater quality. Whether the former drum storage area was a source for contaminants that moved off-site after the drum storage area was upgraded is unknown.

The semivolatile TICs found in all the wells and the catch basin are probably the result of minor spills and parking lot runoff. The presence of these compounds at higher concentrations in TRMW-1 (upgradient well) than in TRMW-2 and at similar concentrations

in TRMW-1, -3 and -4 indicates the site may be impacted by an upgradient source. The area north of the site is industrialized and the Target Rock plant engineer reported what he believed to be a 200-gal fuel oil spill into the recharge basin north of the site. He believed the spill resulted from an overfill during transfer at one of the industrial sites north of Target Rock.

4.6.3 Surface Water/Sediments

The single surface water/sediment sample collected from the catch basin just east of the drum storage area contained 1,1,1-trichloroethane at 20 µg/l, along with low levels (7 µg/l) of 1,1,-dichloroethylene. It is believed that the catch basin from which the sample was retrieved is in direct contact with the groundwater and therefore NYSDEC Class GA standards apply. The Class GA standards for 1,1,1-trichloroethane and 1,1-dichloroethylene are both 5 µg/l. The water sample was collected just before a heavy thunderstorm that quickly filled the catch basin with water. The collected sample is believed to represent conditions that ordinarily exist in the basin. The likely source of the contamination in the catch basin is the drum storage area or from disposal of wastewater containing low levels of contaminants. The areas around this catch basin did show evidence (i.e., staining) that minor amounts of wastewater are being disposed of to the catch basin.

A sediment sample was also retrieved from the catch basin bottom. The bottom appears to be mostly sand and gravel, with trace amounts of silt. The sediments had a distinct petroleum hydrocarbon odor and appeared lightly stained with oil. A number of TICs were found in the sample, primarily compounds associated with petroleum products.

4.7 RECOMMENDATIONS

Based on the documented release of wastewater containing chlorinated solvents and the detection of these solvents above NYSDEC groundwater standards in TRMW-2 and -4 and in the catch basin near the drum storage area, the following additional actions are recommended for the Target Rock site.

1. Periodic sampling of the monitoring wells to ensure that contaminant levels decline as any residual contaminants disperse into the aquifer. If contaminant levels remain the same or increase, additional investigations should be conducted to determine the source of the contaminants.

2. Inventory of area wells to determine whether any public or residential wells are downgradient of the site. If wells are found, they should be sampled to ensure that the site is not impacting the groundwater quality.

3. Installation of several additional wells downgradient of the site as the contaminants may have moved 700 or more feet off site.

4. File review to ensure that the tanks that were removed were not leaking and that the tanks currently on-site are in compliance with environmental regulations, even though motor fuels and heating oils are not listed hazardous wastes. (During the file review conducted for this Phase II investigation documentation indicated that six underground storage tanks were on-site in 1984.)

TABLE 4-2 (Page 1 of 3)

GROUNDWATER SAMPLE DATA SUMMARY (AUGUST 1992)

Target Rock NYSDEC I.D. No. 152119

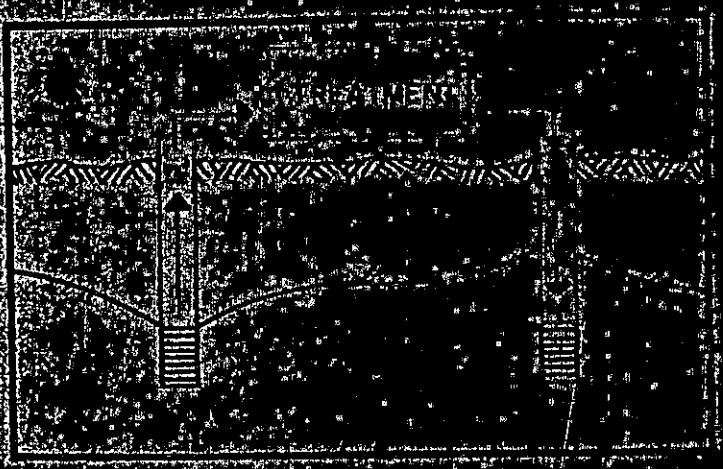
PARAMETER	TRMW-1	TRMW-2	TRMW-3	TRMW-4	MS TRMW-4	MSD TRMW-4	(Blind dup. of TRMW-5) TRMW-5	FIELD BLANK 8/27/92	NYSDEC CLASS GA STANDARDS
VOLATILE ORGANICS (µg/l)									
Methylene chloride	1 b j	1 b j	2 b j	2 b j	1 b j	2 b j	2 b j	1 b j	5.0
Acetone	4 b j	4 b j	5 b j	11 b	8 b j	11 b	4 b j	4 b j	NS
Carbon disulfide	ND	ND	ND	15	14	14	ND	ND	NS
1,1-Dichloroethylene	ND	ND	ND	2 j	*	*	ND	ND	5.0
1,1-Dichloroethane	ND	2 j	ND	1 j	1 j	1 j	ND	ND	5.0
1,2-Dichloroethylene (total)	ND	ND	ND	4 j	4 j	4 j	ND	ND	5.0
Chloroform	ND	ND	ND	1 j	1 j	1 j	ND	ND	7.0
1,1,1-Trichloroethane	ND	43	4 j	66	60	60	3 j	ND	5.0
Trichloroethylene	ND	ND	ND	8 j	*	*	ND	ND	5.0
Tetrachloroethylene	ND	ND	ND	3 j	2 j	ND	ND	ND	5.0
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	3 j	ND	ND	5.0
Tentatively Identified Compounds	ND	ND	ND	ND	ND	ND	ND	ND	-
SEMIVOLATILE ORGANICS (µg/l)									
bis(2-Ethylhexyl)phthalate	18 b	3 j	32 b	26	41	23	26 b	NR	50

* - Spiking compound; data not representative of actual sample concentration.
b - Found in associated blanks.
j - Estimated concentration; compound present below quantitation limit.
MS - Matrix spike.
ND - Not detected at analytical detection limit.
NR - Not run.
NS - No standard.
MSD - Matrix spike duplicate.

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
PHASE II SAMPLING REPORT
RESULTS, CONCLUSIONS AND RECOMMENDATIONS

PREPARED FOR:

[redacted]



FEBRUARY 1989

fanning, phillips & molnar
ENGINEERS

TABLE 8.15*
LABORATORY RESULTS OF GROUNDWATER SAMPLI

SJ&J SITE
Farmingdale, NY

DETECTED CHEMICAL CONSTITUENT	Class GA Groundwater Standards	MW-1 Unfiltered	MW-1 Filtered	MW-2 Unfiltered	MW-2 Filtered	MW-3 Unfiltered	MW-3 Filtered	MW-4 Unfiltered	MW-4 Filte		
METALS (mg/l)											
Antimony	NS	UD	UD	UD	UD	UD	UD	UD	UD		
Arsenic	0.025	UD	UD	UD	UD	UD	UD	0.011	UD		
Beryllium	NS	UD	UD	0.002B	UD	UD	UD	UD	UD	UD	
Cadmium	0.01	UD	UD	UD	UD	UD	UD	UD	UD	UD	
Chromium	NS	UD	UD	0.013	UD	0.011	UD	0.009B	UD	UD	
Copper	1.0	0.057	0.009B	0.053	0.005B	0.056	0.003B	0.081	0.006B	0.038	
Lead	0.025	0.023	0.002B	0.017	UD	0.40	0.003B	0.054	0.007	0.013	
Mercury	0.002	UD	UD	UD	UD	UD	UD	0.0002	UD	UD	UD
Nickel	NS	0.006B	0.008B	0.010B	0.005B	0.023B	0.007B	0.013	UD	0.062	UD
Selenium	0.02	UD	UD	UD	UD	UD	UD	--	--	UD	UD
Thallium	NS	--	--	UD	UD	UD	UD	--	--	UD	UD
Zinc	5.00	0.078	0.031	0.034	0.054	0.053	0.053	0.094	0.060	0.034	0.066

	SAMPLE DATE	MW-2 07/21/88	MW-3 07/21/88	MW-4 07/21/88	MW-5 07/21/88
VOLATILE ORGANIC COMPOUNDS (mg/l)					
TCL VOCs					
Chloromethane		0.039	0.190	0.370	0.015
Methylene Chloride		0.014B	0.160B	0.006	0.008JB
1,1-Dichloroethane		UD	UD	0.005	UD
1,2-Dichloroethene (Total)		0.003J	UD	UD	UD
1,2-Dichloroethane		UD	UD	0.008	UD
1,1,1-Trichloroethane		0.007	0.004J	0.010	UD
Trichloroethene		0.005B	UD	0.005JB	0.004JB
Benzene		UD	UD	UD	0.008J
Tetrachloroethene		0.140	UD	UD	UD
Toluene		UD	UD	0.003J	0.010
Chlorobenzene		UD	UD	UD	0.010
TOTAL TCL VOCs		0.208	0.354	0.407	0.055
TENTATIVELY IDENTIFIED VOCs (mg/l)**					
Unknowns		UD	0.960J	UD	UD
2-Propanone		0.023J	0.470J	0.013	UD
1,2-Dimethoxyethane		UD	0.190	UD	UD
1-(2-Methoxyethoxy)-Butane		UD	0.030J	UD	UD
3-Methyl-2-Butanone		UD	0.072J	UD	UD
3-Methyl Pentane		UD	0.130J	UD	UD
Butanolcacid Methylester		UD	0.069J	UD	UD
2-Butanone (Methyl-ethyl Ketone)		UD	0.925J	UD	UD
Hexane		UD	UD	UD	0.020J
Ethanol		UD	UD	0.360J	UD
Dimethoxy Methane		UD	UD	0.140	UD
Other Unknowns		1.400JB	0.420JB	1.800JB	0.080JB
TOTAL TENTATIVELY IDENTIFIED VOCs		1.423	3.266	2.313	0.100
TOTAL VOCs		1.631	3.620	2.720	0.155
BASE NEUTRAL EXTRACTABLES (mg/l)					
Bis(2-Ethylhexyl)phthalate		0.007JB	0.011B	UD	0.017B
Di-n-octylphthalate		0.002J	0.006J	UD	UD
TOTAL BASE NEUTRAL EXTRACTABLES		0.009	0.017	--	0.017
TOTAL ACID EXTRACTABLES (mg/l)		UD	UD	--	UD

* - See Appendix H for laboratory results of trip blanks and field blanks
(1) - See Figure 8.2 for sampling locations
** - Carbon dioxide results were not included
TCL - Target Compound List
B - Detected in Method Blank
J - Below mean quantification of laboratory
-- - Not Analyzed
UD - Undetected
NS - No class GA standard

TABLE 8.16*

LABORATORY RESULTS FOR WATER SAMPLES OBTAINED FROM VARIOUS SOURCES
SJ&J SITE
Farmingdale, NY

DETECTED CHEMICAL CONSTITUENT(1)	Old Industrial Waste Water Settling Tank	Broken Pipe
METALS (mg/l)		
Arsenic	UD	UD
Cadmium	UD	UD
Chromium	UD	0.022
Copper	4.330	0.143
Lead	0.106	0.290
Mercury	UD	0.0003
Nickel	0.215	0.0122
Zinc	2.040	0.247
Silver	UD	UD
Hexavalent	--	UD
VOLATILE ORGANIC COMPOUNDS (mg/l)		
TCL VOCs		
Chloromethane	0.029B	0.019B
Methylene Chloride	0.013B	UD
1,1-Dichloroethane	0.010	UD
1,2-Dichloroethene (Total)	UD	UD
1,2-Dichloroethane	UD	UD
1,1,1-Trichloroethane	UD	UD
Trichloroethene	UD	UD
Benzene	0.004J	UD
Tetrachloroethene	UD	UD
Toluene	0.027	UD
Chlorobenzene	UD	UD
1,1-Dichloroethene	0.015	UD
Ethylbenzene	0.064	UD
Chloroethane	UD	0.012B
TOTAL TCL VOCs	0.162	0.031
TENTATIVELY IDENTIFIED VOCs**		
Unknowns	0.330J	0.212J
Butycyclopentane	0.025J	UD
Unknown Nitrile	0.036J	UD
Unknown sub noname	0.034J	UD
2-Propanone	UD	0.045J
3,4-Nonadiene	UD	0.067J
4-Ethyl-3-Heptene	UD	0.007J
3-Ethyl-3-Heptene	UD	0.035J
2-Methyl heptane	UD	0.039J
Methylcycloheptane	UD	0.021J
1,2-Dimethoxyethane	UD	UD
1-(2-Methoxyethoxy)-Butane	UD	UD
3-Methyl-2-Butanone	UD	UD
3-Methyl Pentane	UD	UD
Butanoicacid Methylester	UD	UD
2-Butanone (Methyl-ethyl Ketone)	UD	UD
Hexane	UD	UD
Ethanol	UD	UD
Dimethoxy Methane	UD	UD
Other Unknowns	UD	UD
TOTAL TENTATIVELY IDENTIFIED VOCs	0.425	0.426
TOTAL VOCs	0.587	0.457
BASE NEUTRAL EXTRACTABLES		
Bis(2-Ethylhexyl)phthalate	UD	UD
Di-n-octylphthalate	UD	UD
TOTAL BASE NEUTRAL EXTRACTABLES	UD	UD
TOTAL ACID EXTRACTABLES	UD	UD

* - See Appendix H for laboratory results of trip blanks and field blanks
(1) - See Figure 8.2 for sampling locations
TCL - Target Compound List
UD - Undetected
B - Detected in Method Blank
J - Below mean quantification level of laboratory
** - Carbon dioxide results were not included
-- - Not analyzed

Leaching Pools (Former Drum Storage Area)

The laboratory results of the soil sampling within the three (3) leaching pools indicated that the soil sample obtained from LP-2 was detected with high concentrations of Cu, Hg, Cd and Zn which exceeded the guidelines in Tables 9.1 and 9.2. The soil samples obtained from LP-1 and LP-3 were detected with high concentrations of Zn which exceeded the guidelines. In addition, the total VOC concentrations in all three (3) leaching pools exceeded the guidelines in Table 9.2. The VOC appear to be automotive derived in nature. The high concentrations of Cu, Hg, Cd, Zn and VOCs (See Figure 9.1) requires further attention.

The client has been notified of the contamination in the leaching pools and FP&M has directed them to block the infiltration of water into all three (3) of the leaching pools in order to eliminate the potential leaching of the contaminants into the underlying soils. Section 10.0 will present recommendations for the soils within the leaching pools.

It should be pointed out that Table 4.1 of this report indicates that four (4) leaching pools were supposed to be sampled. However, through field investigation, one (1) of these locations was identified as a sewer man-hole cover and therefore there was no soil sample obtained at that location.

Test Boring in Former Solvent Drum Storage Area (To Water Table)

The laboratory results of the soil sampling within test boring TB-1 indicated that low concentrations of total VOCs were detected in all four (4) of these soil samples. The total VOC concentrations encountered were below the guidelines in Table 9.2.

9.4 Discussions and Conclusions For The Ground Water Sampled At The Site

Soils:

The laboratory results of the soil samples obtained during the installation of wells MW-1, MW-3 and MW-4 indicated only low concentrations of total VOCs (See Table 8.13). The concentrations of total VOCs were below the guidelines in Table 9.2.

Ground water:

The laboratory results for the ground water samples obtained on the SJ&J site were compared to the ground water standards as defined in the NYSDEC ground water standards (Water Quality Regulation New York State Codes, Rules and Regulations, Title 6, Chapter X, Part 703.5). Ground water samples detected with contaminant concentrations exceeding the NYSDEC were noted as such. (See Table 8.15).

The laboratory results of the ground water sampling from four (4) on-site monitoring wells and 1 (one) upgradient monitoring well indicate low concentrations of metals and VOCs with the exception of MW-3 and MW-4. Samples MW-3 and MW-4 (unfiltered) were in violation of the NYSDEC class "GA" ground water standards for Pb.

In addition, ground water samples MW-2, MW-3, MW-4, and upgradient well MW-5 were detected with concentrations of VOCs. Table 8.15 shows that a number of target compound list VOCs were detected at low concentrations. A number of tentatively identified VOCs were detected most of which are unknown. The total VOCs at MW-2, MW-3, MW-4 and MW-5 ranged from .155 mg/l in MW-5 to 3.62 mg/l in MW-3. Base neutral and acid extractables were detected in extremely low concentrations or not at all.

The violations of the ground water standards at MW-3 and MW-4 for Pb requires further investigation. The large number of VOCs that were detected in MW-2, MW-3, MW-4, and MW-5 indicates that VOCs are present in the water table, both up and down gradient of the site. In addition, no other well except for MW-3 has soils up gradient and contaminated with VOCs, that could be construed as a source. Secondly, more than half of the total VOC concentrations are made up of unknowns and not the TCL parameters. Finally, there is no pattern or fingerprint of the organics found in the leaching pools and the organics found in the wells. This relationship shows more of a random pattern. The location of MW-3 indicates that the source of VOCs may be attributed to the leaching pools directly upgradient of this well. Section 10.0 presents recommendations for the groundwater at the site.

SECTION 10

RECOMMENDATIONS

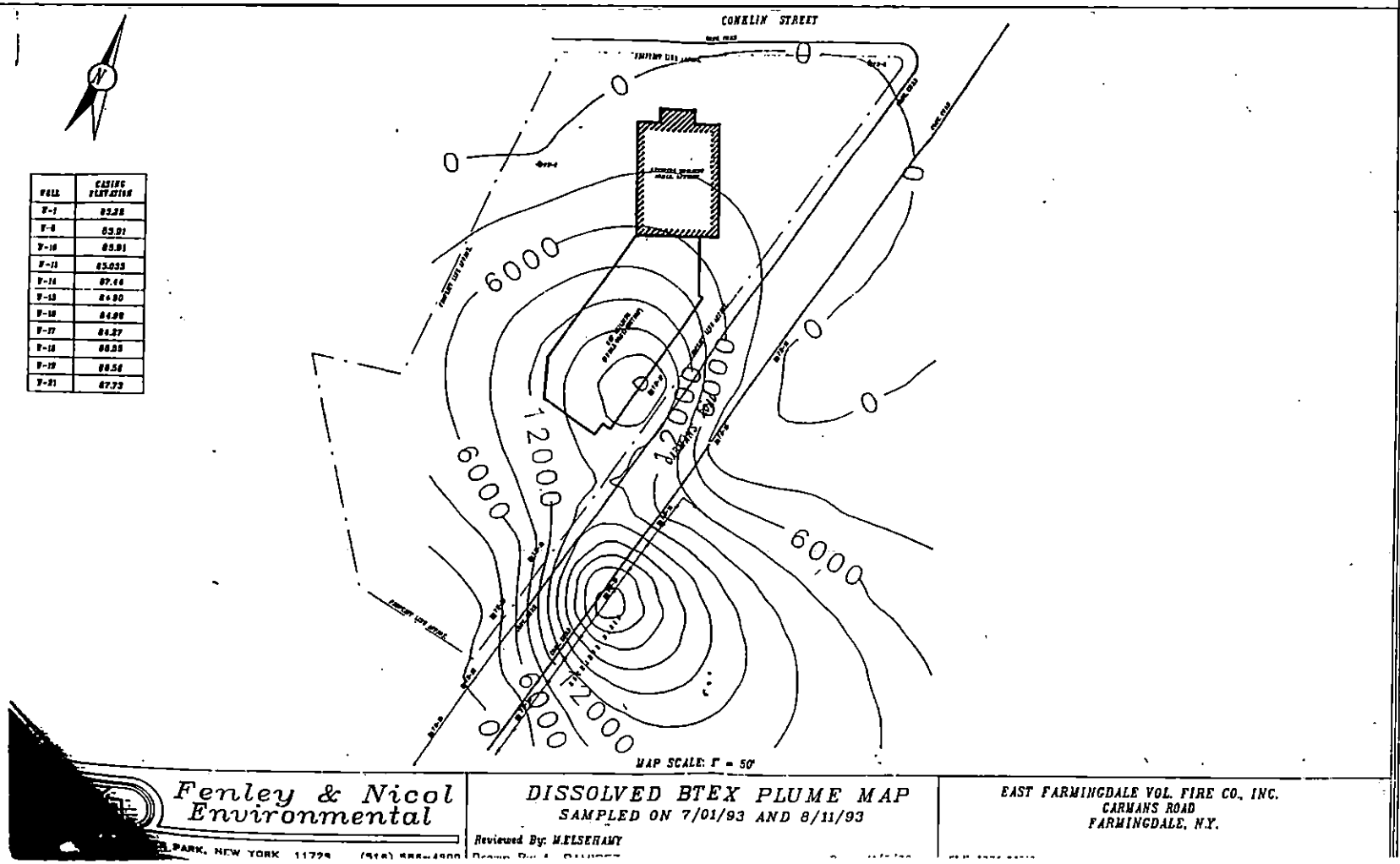
Throughout this site investigation, a number of environmental concerns were identified on the site and were addressed through soil and ground water sampling. The discussions and conclusions of this report enabled FP&M to formulate the following recommendations (See Figure 9.1 for locations of areas of concern at the SJ&J site):

1. Resample the ground water during late spring (during high water table conditions) in order to substantiate the first round sampling results. The ground water samples should be tested for TCL parameters as before at well locations MW-2, MW-3, and MW-5. The groundwater at MW-4 should be tested for total metal analysis (select metals) and VOCs as per EPA Method 624. The groundwater at MW-1 should be tested for total metals (select metals) and VOCs as per EPA Method 624.
2. Sample soils in all three (3) leaching pools by continuous split spoon samples down to the water table. Samples should be tested for select metals, VOCs and petroleum hydrocarbon. Based upon the laboratory results, soils should be excavated from the pools by a licensed hauler, and disposed of at a NYSDEC approved landfill if the petroleum hydrocarbon level does not exceed 3 percent.
3. Should the resampling of the wells confirm organic contamination for MW-3, install a well directly down gradient of MW-3 (100') to investigate down gradient water quality from the three (3) pools. This well will be off site and will require permission from the land owner. This groundwater should be

tested for TCL compounds.

The high metals detected at HB-11 (0"-6"), HB-13 (6"-12"), HB-16 (6"-12"), HB-17 (6"-12"), HB-19 (0"-6") and HB-21 (0"-6" and 30"-36") warrant attention. Metals are relatively immobile in soils and are not migrating into the water table thus far as shown in the ground water sampling results. Preliminary evaluation of the exposure routes in concentrations of As, Cu, Cd, Ag and Zn in the soils at the SJ&J site indicate that there is no significant concern for dust control (See Appendix M for evaluation and methodology used). Alternatives to the remediation at these six (6) locations include:

1. Excavate soils and use as aggregate for concrete.
2. Encapsulation via pavement (asphalt parking lot etc..) in order to minimize the migration of Cu, As, Ag, Cd and Zn into the water table aquifer and to further isolate it from the occupants on the site.
3. Excavate and use as cover material for landfill. A risk assessment will be performed for each of these scenarios to insure public health, safety and welfare.



WELL	CASING ELEVATION
V-1	93.38
V-8	93.91
V-10	93.91
V-13	93.033
V-14	97.14
V-15	94.90
V-16	94.98
V-17	94.37
V-18	96.35
V-19	96.56
V-21	97.73

Fenley & Nicol Environmental

PARK, NEW YORK 11729 (516) 586-4900

DISSOLVED BTEX PLUME MAP

SAMPLED ON 7/01/93 AND 8/11/93

Reviewed By: M.FLSEHAMY

EAST FARMINGDALE VOL. FIRE CO., INC.
CARMANS ROAD
FARMINGDALE, N.Y.

PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

East Farmingdale Fire Company
Conklin Street Fire House
East Farmingdale, New York

SITE INVESTIGATION
CONKLIN STREET FIRE HOUSE
EAST FARMINGDALE
for
EAST FARMINGDALE FIRE COMPANY

1. INTRODUCTION

During a routine underground fuel storage tank removal at the East Farmingdale Fire Company's Conklin Street Facility, representatives of the New York State Department of Environmental Conservation observed an odor they believed to be petroleum products in the soil. The Fire Company was ordered to remediate the soil contamination.

A field investigation was performed by representatives of *Pedneault Associates*, of the subject parcel and surrounding areas, in September of 1990. The site reconnaissance was designed to investigate the current environmental situation at the property, and to identify types and sources of contamination, if any, that are present on or adjacent to the site.

2. SITE LOCATION AND DESCRIPTION

The site is located in the north-west portion of the Town of Babylon, Suffolk County, New York, in the unincorporated area of East Farmingdale, as shown on the Area Map, Figure 1. More

specifically the site is located at Conklin Street, West of Carman's Road, on the southern side of the road, as shown on the Location Map, Figure 2.

The site and building are currently owned by East Farmingdale Fire Company. The current owners operate a Volunteer fire department at this site.

Water services, gas and electric all enter the building off Carman's Avenue on the east side. Potable water is provided by the Farmingdale Water Company and the gas and electric by the Long Island Lighting Company (LILCO). There are no water wells on the site for supplementing the SCWA service. A 1 1/2 inch water service enters the building and connects to an RPZ and meter. Gas and electric also have meters and controls inside the east wall of the building, next to the water service. Outside the building; also along the east side of the building, are gas shutoff valves and meters and an electrical transformer. The gas lines and transformer are protected by bollards. There is an ancillary, one story masonry building in the southwest corner of the lot. This structure also has water and electric. There was a fuel pumping island and storage tanks located south of the main building.

6. CONCLUSION AND RECOMMENDATIONS

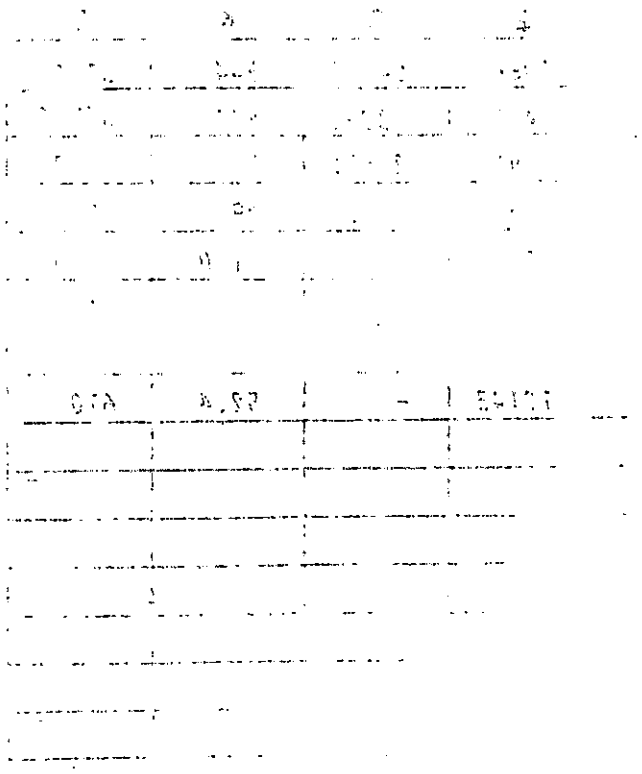
Observation wells were installed at the site in September, 1990, by Fenley and Nicol Company, Inc. The seven (7) wells were dug to a depth of 30 feet, 10 feet into groundwater. The New York State Department of Environmental Conservation installed a 2" well previous to Fenley and Nicol. A map of their locations is provided as figure 3.

Pedneault Associates has performed a series of analyses on the eight (8) wells at the East Farmingdale Fire Department's Conklin Street Facility, installed by Fenley and Nicol Company, Inc. A copy of the lab reports are included with this report.

As can be seen on the lab reports, the highest levels of total BTX at the southeast corner of the property decreasing in a northwest direction across the property (see Figure 6). Also high levels of Tetrachloroethene were found in wells FN-3, 4, 6 & 7, along the eastern property line. These levels also decrease in a westerly direction across the site (see Figure 7). Trichloroethene was found in four of the wells. Although floating product was found in one of the downstream wells, no other downstream well floating produced product when sampled.

The constituents, and their levels, found in this plume are not indicative of a fuel spill from the on-site underground fuel storage tanks. Based on this and the information available to *Pedneault Associates* at this time, it is believed, that this plume is originating off-site from a northerly or northeasterly direction. It is also suspected that there are two separate plumes from two different sources.

As this point we recommend that the State further its investigation off-site, particularly on the eastern side of Carman's Road, south from Conklin Street. East Farmingdale Fire Department should not be financially responsible for the additional investigation.



PEDNEAULT ASSOCIATES, INC. TESTING LABORATORIES
1615 NINTH AVENUE · P.O. BOX 205 · BOHEMIA, N.Y. 11716 · (516) 467-8477
AFTER 5 P.M. (516) 567-5579

October 24, 1990

TO: East Farmingdale Fire Department
930 Conklin Street
East Farmingdale, NY 11735

RE: 930 Conklin Street,
East Farmingdale, NY.

Date: Collected 9/28/90 **Analyzed** 9/28-10/4/90 **Report** 10/24/90

Sampling Point

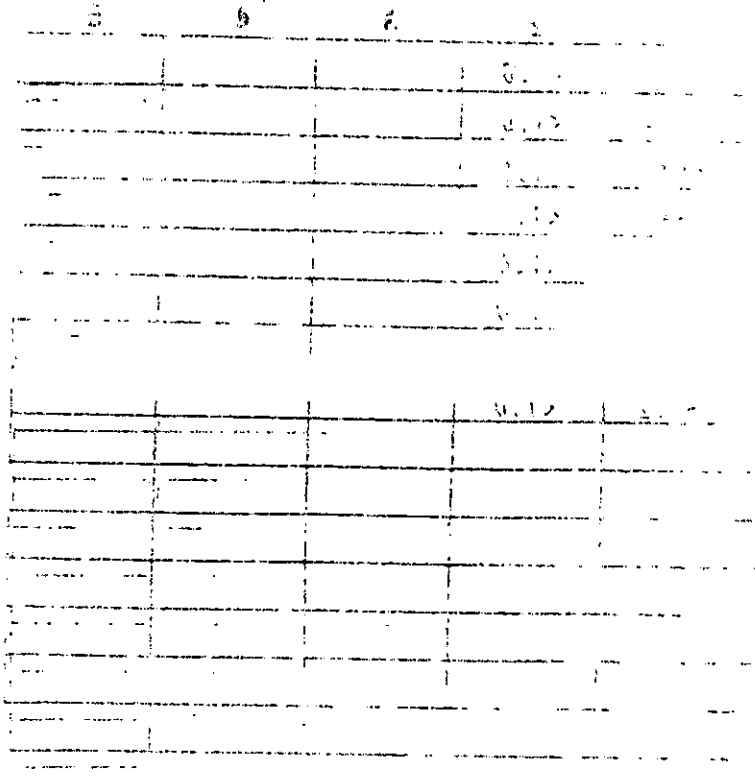
1. FN-3
2. FN-4
3. DEC Well
4. FN-2
5. FN-5

Parameters		1	2	3	4	5
Benzene	ppb	1020	1066	24528	544	31061
Toluene	ppb	1212	1485	73290	678	88770
Xylene	ppb	343	6190	23572	152	45198
Ethylbenzene	ppb	101	1938	9192	29.4	19344
Chlorobenzene	ppb	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorobenzene	ppb	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethylene	ppb	5327	12143	-	52.4	670

Lab Number 66263
kms

Method 602

JOHN PEDNEAULT
Lab Director



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East Farmingdale, NY.

Date: Collected 9/28/90 **Analyzed** 9/28-10/4/90 **Report** 10/24/90

Sampling Point

1. FN-6
2. FN-1
3.
4.

Parameters		1	2	3	4	5
Benzene	ppb	1829	<1.0			
Toluene	ppb	3434	<1.0			
Xylene	ppb	22490	<1.0			
Ethylbenzene	ppb	7889	<1.0			
Chlorobenzene	ppb	<1.0	<1.0			
Dichlorobenzene	ppb	<1.0	<1.0			
Tetrachloroethylene	ppb	37.2	<1.0			

JOHN PEDNEAULT
Lab Director

Lab Number 66263
kms

Method 602