#3

ENGINEERING INVESTIGATIONS AT

INACTIVE HAZARDOUS WASTE SITES

PRELIMINARY SITE ASSESSMENT

SEA CLIFF AVENUE INDUSTRIAL AREA
TOWN OF OYSTER BAY

SITE NO. 130053
NASSAU COUNTY

DATE: MARCH 1994

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:

NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
Division of Sanitation and Water Supply
Hazardous Waste Services Unit

DIVISION OF SANITATION AND WATER SUPPLY
HAZARDOUS WASTE SERVICES UNIT
Engineering Investigations at Inactive Hazardous Waste Sites
Preliminary Site Assessment
Site No. 130053
Sea Cliff Avenue Industrial Area

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SITE NO. 130053

1.0 EXECUTIVE SUMMARY

The Nassau County Department of Public Works (NCDPW), Hazardous Waste Services Unit, under contract to the New York State Department of Environmental Conservation, Bureau of Hazardous Site Control, conducted a Preliminary Site Assessment (PSA) of the Sea Cliff Avenue Industrial Area site, located in the City of Glen Cove, Town of Oyster Bay, Nassau County, New York.

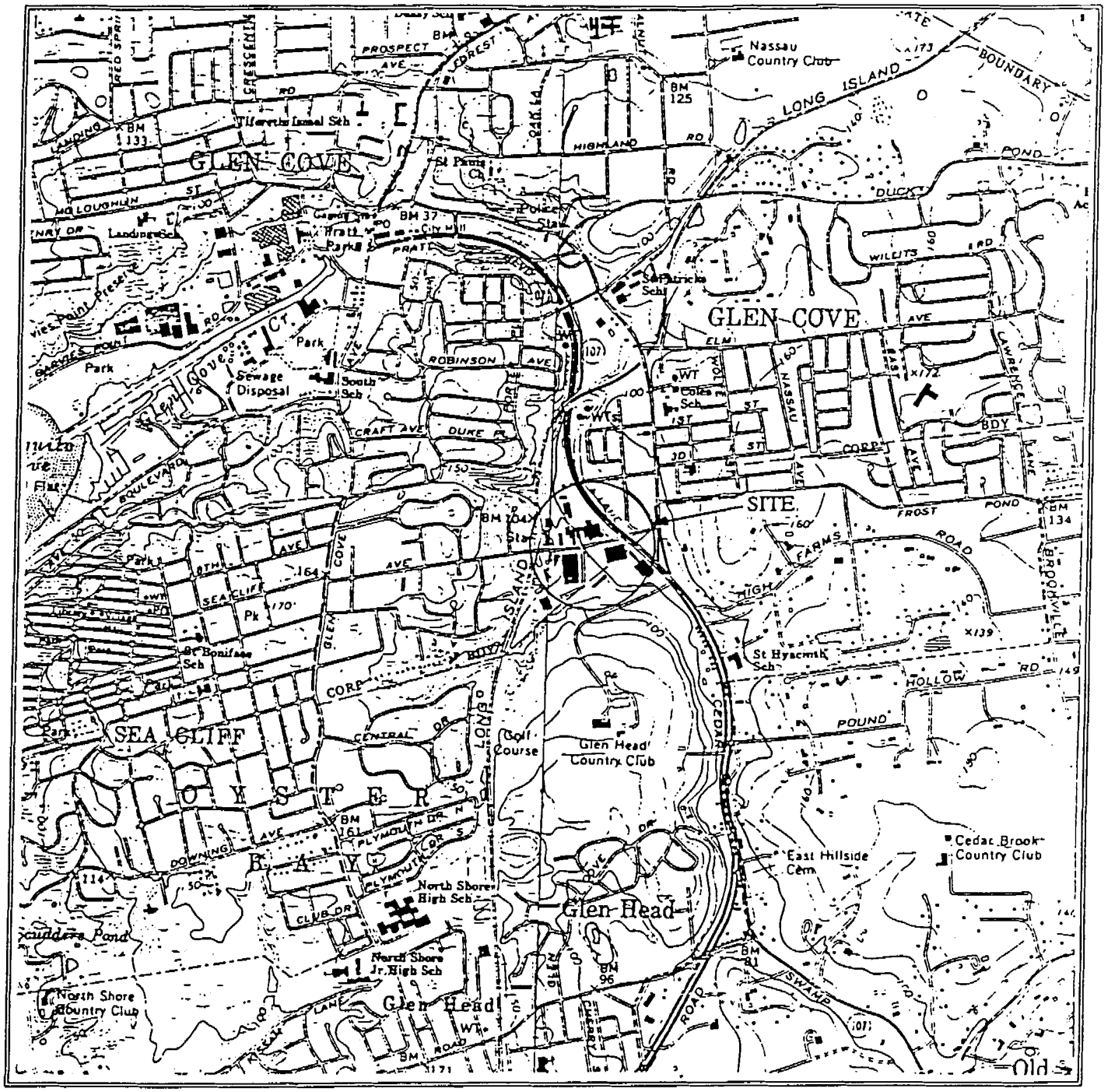
The presence of volatile organic compounds (VOC's) in groundwater at high concentrations, which contravene New York State Department of Health Drinking Water Standards, beneath the industrial area has been documented in past investigation reports, and has resulted in the closure of three public supply wells owned by the City of Glen Cove.

The industrial area examined under this PSA, is comprised of five industrial properties, Photocircuits Corporation, Pass and Seymour, Inc., August Thomsen, Pall Corporation and Associated Drapery, and one non-industrial property, the Carney Street Wellfield owned by the City of Glen Cove. All properties examined had alleged releases of chemicals to the environment or used and stored significant volumes of synthetic organic chemicals.

The Sea Cliff Avenue Industrial Area is located within an area of glacial moraine and is characterized by a variable surface topography (Figure A). Specifically, the study area is situated in a north-south trending valley that runs parallel to Glen Cove Creek, elevations rise rapidly to the east and west of the study area from 40-60 feet above sea level (ASL) to over 175 feet ASL. The geology of the study area is comprised of three hydrostratigraphic units, an upper glacial till of generally low permeability, a sand and gravel unit of moderate to high permeability and the areally extensive Port Washington confining clay unit which forms the base of the glacial aquifer in the study area.

Three comprehensive water level surveys were conducted as part of this PSA, utilizing twenty-one existing and two new groundwater monitoring wells. The contoured groundwater elevation data indicates that groundwater generally flows from southeast to northwest in the shallow portion of the upper glacial aquifer beneath the study area, and that Glen Cove Creek acts as a discharge area for the surrounding topographic highs. Horizontal flow gradients across the study area range from 0.005 ft/ft to 0.01 ft/ft, with the variability due to local till units.

Several environmental assessments and investigations by government agencies and private parties have been performed in the study area. Due to the abundance of both soil and groundwater data from the previous environmental work, a limited number of soil borings and monitoring wells were



SITE LONGITUDE – 73.6231° W
SITE LATITUDE – 40. 8518° N

NORTH

FIGURE A – SITE TOPOGRAPHY

Source: U.S.G.S. Sea Cliff and Hicksville Quadrangles
Scale: 1" = 2000'

constructed as part of this PSA. The bulk of information used to evaluate the industrial and non-industrial properties was taken from three studies conducted by the consulting firms Holzmacher, McLendon & Murrell, P.C. (H2M), and Fanning Philips & Molnar, from 1989 to 1993. NCDPW site inspections were also used to evaluate the soil and groundwater impacts on each property in this study.

A summary of the specific site assessments follows:

PHOTOCIRCUITS CORPORATION

The Photocircuits property is located on the south side of Sea Cliff Avenue and has had ongoing industrial activity onsite since 1954. The property has been formerly owned by Powers Chemco (1954-1971) and Kollmorgen Corporation (1971-1986). Both Kollmorgen and Photocircuits have manufactured printed circuit boards. Several buildings and outside areas have stored solvents used for manufacturing purposes, including Methylene Chloride, 1,1,1-Trichloroethane and Tetrachloroethene. Soil quality data obtained from the 1992 H2M report for Photocircuits site has shown Methylene Chloride concentrations ranging up to 51,000 ppb, 1,1,1-Trichloroethane up to 120,000 ppb and Tetrachloroethene up to 51,000 ppb, which all exceed State cleanup objectives. In addition, groundwater samples collected from beneath the Photocircuits property also show Methylene Chloride, 1,1,1-Trichloroethane and Tetrachloroethene detected at maximum concentrations of 100 ppb, 2,100 ppb and 66 ppb, respectively. Again, all three compounds greatly exceed the

State's maximum contaminant levels (MCL's) for groundwater in the study area which is 5 ppb for each compound. The 1,1,1-Trichloroethane concentrations were also observed to be more than an order of magnitude greater than those found in any of the downgradient wells, indicating a major on-site source of this compound. Therefore, based upon the presence of specific volatile organics historically used onsite and found in levels exceeding State soil cleanup objectives and groundwater standards, it is recommended that the Photocircuits site be classified a Class 2 site, in that it poses a significant threat to the environment and public health.

PASS AND SEYMOUR

Pass and Seymour is located on the south side of Sea Cliff Avenue and manufactures electric components, switches, outlets and wall boxes, as did the former property owner, Slater Electric Company. The inspection of the site identified storage of Tetrachloroethene used for production. Several existing monitoring wells were identified during the inspection, and data from a 1992 H2M sampling round of the site wells was used as the basis for the soil and groundwater assessment.

Methylene Chloride, Acetone, Trichloroethene and Tetrachloroethene were detected in on-site soil, however, only Tetrachloroethene exceeded State cleanup objectives, at a high of 2300 ppb.

The groundwater data from the site wells showed several

halogenated organics to be present. 1,2-Dichloroethene and Tetrachloroethene were identified at concentrations exceeding State MCL's, with Tetrachloroethene levels over 100 ppb in monitoring well MW-1S.

Due to storage and use of solvents, specifically Tetrachloroethene, and the detection of Tetrachlorethene in both soils and groundwater beneath the site, and the lack of any upgradient source of volatile organics, it is recommended that the Pass and Seymour be classified a Class 2 site in that it poses a significant threat to the public health and the environment.

PALL CORPORATION

The Pall Corporation is located on the north side of Sea Cliff Avenue and has occupied the site since 1946. Pall Corporation manufactures a variety of filtration products. Currently the site is geared toward research and development with the bulk of production occurring over twelve years ago. Although there was no indication of current use of solvents, Nassau County Department of Health Industrial Chemical Profiles show historical use of both Trichloroethene and Tetrachloroethene.

Five groundwater monitoring wells were identified during the site inspection and data from the 1992 H2M report provides both soil and groundwater results for these well locations. Eight volatile organic compounds were identified in the soils: Acetone, 1,1-Dichloroethane, 1,2-Dichloroethene, Trichloroethene, Tetrachloroethene, Toluene,

Ethylbenzene and Xylene. Xylene was the only constituent in the soil that exceeded State cleanup criteria.

Wells onsite characteristically showed detectable levels of Vinyl Chloride, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethene, Trichloroethene, Tetrachloroethene and Xylene. Concentrations of both 1,2-Dichloroethane (3500 ppb) and Trichloroethene (1600 ppb) far exceeded the State's MCL standard of 5 ppb. The maximum on-site concentrations of Trichloroethene in groundwater beneath the site also occurred at values over 20 times greater than the nearest potential upgradient source, indicating an on-site origin for this compound. Therefore, considering Pall Corporation's past use and storage of solvents, their detection in both the soil and groundwater beneath the site at concentrations exceeding State groundwater standards, it is recommended that Pall Corporation be classified as a Class 2 site, in that it poses a significant threat to the public health and the environment.

AUGUST THOMSEN

The August Thomsen site is located on the north side of Sea Cliff Avenue, adjacent to the Pall Corporation. The site was formerly owned by Pall Corporation. Currently August Thomsen uses the property for the production of pastry bags and tubes. An inspection of the site showed the bulk storage of acids and bases used for current manufacturing processes; however, past storage of solvents by Pall Corporation was likely, as indicated by historical Health Department

Industrial Chemical Profiles.

Two on-site groundwater monitoring wells were identified during the inspection, and data obtained from the H2M 1992 Sea Cliff Avenue Investigation shows that four soil borings were also completed. The soil borings data shows only Tetrachloroethene present in one boring at 8 ppb and several tentatively identified compounds (TIC's), of which neither exceeded any State cleanup objectives.

The data from the two groundwater monitoring wells indicate the presence of volatile organic compounds (VOC's) at concentrations ranging from 2 ppb to 1444 ppb. The two principal VOC's identified were Trichloroethene and Tetrachloroethene at 380 ppb and 410 ppb, respectively. These two compounds far exceed the State's MCL of 5 ppb, and considering the past use of Trichloroethene and Tetrachloroethene by Pall Corporation, it is recommended that August Thomsen be classified a Class 2 site since it poses a significant threat to the public health and the environment.

ASSOCIATED DRAPERY

The Associated Drapery site is located on the north side of Sea Cliff Avenue and it is in the business of cutting and sewing fabrics. The property was the site of the former HMS Machine Shop. During a site inspection for the PSA no indication of storage or use of chemicals was observed and there was no indication of past contamination.
The Associated Drapery site was not part of any previous environmental investigations; therefore, three soil borings

and two groundwater monitoring wells were installed as part of this PSA. The predominant compounds identified in soil were semi-volatiles indicative of petroleum contamination. Several volatile organics were also identified in soil samples, specifically Methylene Chloride and Acetone; but they were present in blank samples and are also well known laboratory contaminants. All levels of VOC's in soils were below any State cleanup objectives, as were detected levels of pesticides, PCB's and semi-volatiles.

Groundwater monitoring data showed no indication of prolonged use of organics onsite, as indicated by the low levels of VOC's identified in groundwater samples. MCL's for total semi-volatiles were exceeded, again indicating a petroleum related problem. Therefore, it is recommended that the Associated Drapery site be referred to the NYSDEC's Division of Spills Management for further action.

CARNEY STREET WELLFIELD

The Carney Street Wellfield is located on the north side of Sea Cliff Avenue and was operated continuously from 1950 - 1977 until it was closed due to high volatile organic contamination. The Wellfield property is currently occupied by the City's Water Department, Emergency Medical Services, and a day care center which was constructed in 1989 and expanded in 1992.

The Carney Street site was inspected for this PSA and it appears that every effort to properly contain and dispose of waste materials generated onsite has been taken. There was

no indication of bulk storage of chemicals or improper disposal.

Soil conditions on the Carney Street site were evaluated from data collected during two separate environmental surveys, a 1991 H2M report comprising six soil borings and a 1992 Fanning Philips and Molnar report comprising eight soil borings. The data indicated both halogenated and non-halogenated organic compounds in the soils; however, the major constituents were petroleum based compounds of which several exceeded State cleanup objectives.

Two groundwater monitoring wells exist on the site and data shows that significant levels of volatile organic compounds (VOC's) are present beneath the property. Concentrations of Vinyl Chloride, Trichloroethene, Tetrachloroethene and 1,2-Dichloroethene were detected at levels which exceeded State MCL's. In addition, aromatic compounds, Toluene, Xylene and Ethylbenzene all exceeded their respective MCL's or class GA groundwater standards.

The presence of aromatic compounds in soils and groundwater exceeding State standards indicate that they were derived from an on-site petroleum spill which should be reviewed by the New York State Department of Environmental Conservation, Division of Spills Management, for appropriate action. However, since the site has only been used for non-industrial purposes and because there is no indication of bulk storage of solvents, the halogenated VOC's in the groundwater are most likely from an upgradient industrial

source. Therefore, pending resolution by the State's Division of Spills Management, it is recommended that the Carney Street Wellfield property not be listed among those sites requiring further action by the Bureau of Hazardous Site Control.

2.0 OBJECTIVES

The Nassau County Department of Public Works (NCDPW), Hazardous Waste Services Unit, under contract to the New York State Department of Environmental Conservation, Bureau of Hazardous Site Control, conducted a Preliminary Site Assessment of the Sea Cliff Avenue Industrial Area site, located in the City of Glen Cove, Town of Oyster Bay, Nassau County, New York.

This investigation was initiated in response to the detection of volatile organic chemicals in monitoring, industrial and public supply wells, in the immediate vicinity of the Sea Cliff Avenue Industrial Area. The presence of these volatile organic chemicals in groundwater at concentrations above New York State Department of Health Drinking Water Standards, resulted in the closure of three public supply wells, owned by the City of Glen Cove in 1977. Volatile organic chemicals (VOC's) previously identified in groundwater in the vicinity of the site include: Tetrachloroethene, Trichloroethene, 1,1,1-Trichloroethane, cis-1,2-Dichloroethene, 1,1-Dichloroethane and Vinyl Chloride. This assessment will examine on-site soil and

groundwater conditions at five contiguous industrial locations and a single non-industrial site where significant volumes of VOC's were either stored or where these VOC's were allegedly spilled or discharged to the ground. The specific industries in the study area are:

1) Associated Drapery Equipment/Novelty Scenic Studies (formerly HMS Machine Shop), 40 Sea Cliff Avenue;
2) Pall Corporation, 30 Sea Cliff Avenue;
3) Pass and Seymour, Inc., 45 Sea Cliff Avenue (formerly Slater Electric Corp);
4) Photocircuits Corporation, 31 Sea Cliff Avenue;
5) August Thomsen, 36 Sea Cliff Avenue

Soil and groundwater quality at these five industrial locations and at the City of Glen Cove's Carney Street Wellfield will be established by comparing onsite concentrations to existing soil and groundwater standards in order to determine the extent and degree of possible contamination and its potential impact on any public receptors.

3.0 Background

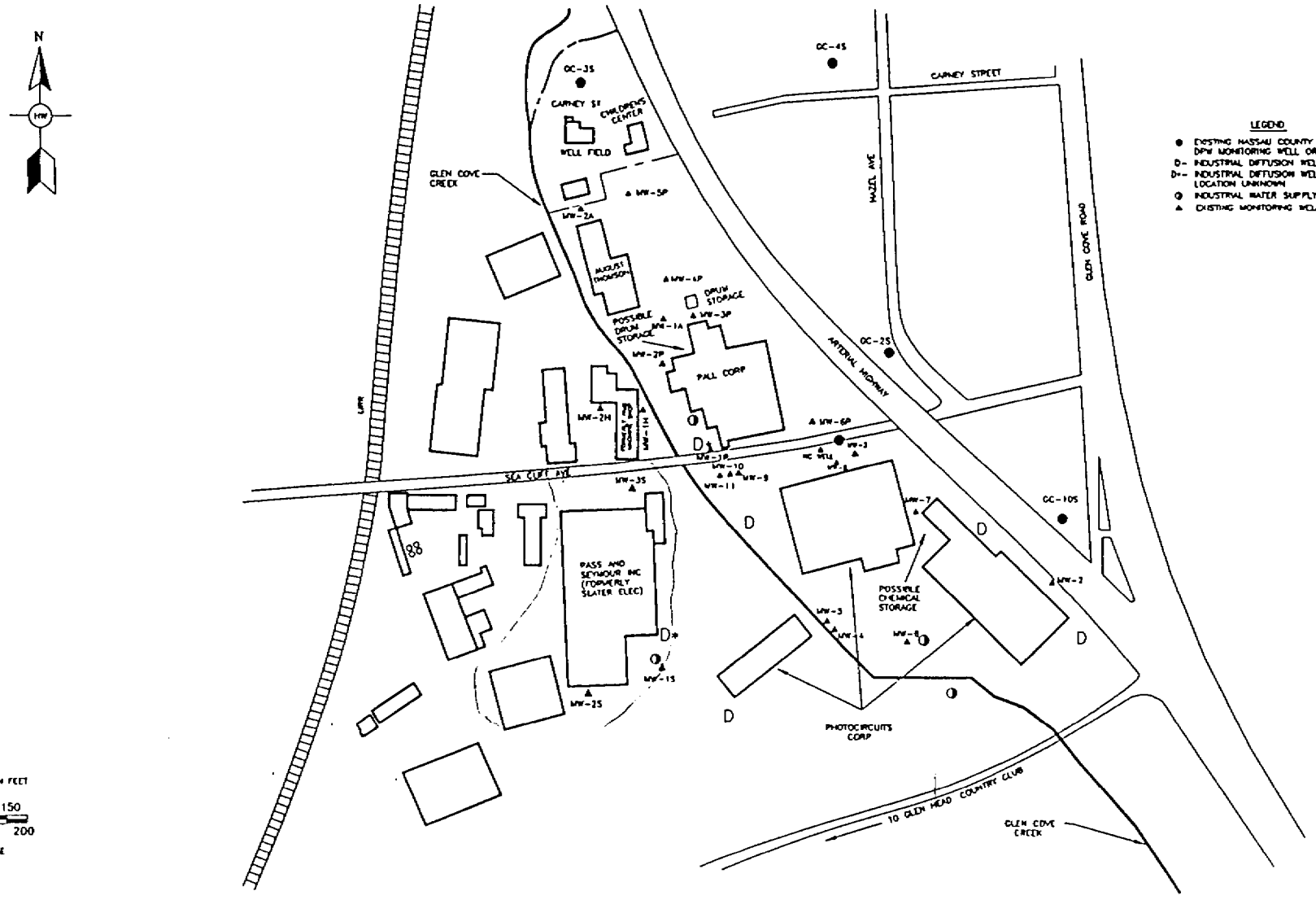
3.1 Site Location and Description

The Sea Cliff Avenue Industrial Area is located in the City of Glen Cove, Town of Oyster Bay, Nassau County, in a north-south trending valley which runs parallel to Glen Cove Creek. The site is comprised of five separate industrial

locations which lie within the boundaries of a triangle formed by the Glen Cove Arterial Highway to the east, Long Island Railroad property to the west, and Glen Head Country Club at its base (Figure 1). The Carney street Wellfield lies at the apex of this triangle. The study area is located within an area of glacial moraine and is characterized by a variable surface topography with elevations ranging from approximately 42 feet above sea level (ASL) at the arterial highway overpass, 54 ft. ASL at the Sea Cliff Avenue Industrial Area, and approximately 66 feet ASL at the Glen Head Country Club. Elevations rise rapidly to the east and west of the Industrial Area to approximately 175 ft. ASL.

3.2 Site History

The five industries (Pall Corp., August Thomsen, Pass & Seymour, Associated Draperies and Photocircuits Corp.) which comprise the majority of the site that will be examined in this Preliminary Site Assessment, are all located along Sea Cliff Avenue. The single non-industrial location: the Carney Street Wellfield which is also considered to be part of the site, is located north of Sea Cliff Avenue on the west side of the Arterial Highway. Industrial activity has been ongoing in the vicinity of Sea Cliff Avenue since the late 1940's. The nature and type of industry in the area has varied over the years, with individual businesses changing hands at many of the current locations.



			FILE NAME: \DWG\GCIND	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT
			SCALE: AS SHOWN	DWG. NO.	DRAWN BY: J.ZIMMET	DATE 4/21/93	FIGURE 1 SITE PLAN GLEN COVE INDUSTRIAL AREA GLEN COVE, NEW YORK
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M.FLAHERTY	DATE 4/13/93	CHECKED BY: S.URBAN	DATE 4/22/93	
NO.	REVISION DESCRIPTION	DATE					

A review of available reports and records indicate that Pall Corporation has operated at its current location since 1946. Pall Corporation develops and manufactures filtration products for a wide variety of uses.

August Thomsen currently manufactures cake decorating utensils. The property was owned by Pall Corporation until 1971. The building which currently houses August Thomsen was a research and development facility for Pall's Aerospace Division.

Industrial activity at the current Photocircuits Corporation facility has been ongoing since 1954, when the property was owned by Powers Chemco. Powers Chemco operated at this site until 1971, when Kollmorgen Corporation purchased the property. Kollmorgen Corp. manufactured printed circuit boards for electronic applications until 1986, when Photocircuits Corporation purchased the property. Photocircuits has continued in the production of printed circuit boards.

Pass and Seymour currently manufactures injection molded plastic components for electronic applications. These components include outlets, switches and wall boxes. Identical products were produced at this facility for over twenty years by the former owners of the property, Slater Electric.

The last industry examined in this Preliminary Site Assessment (PSA), Associated Draperies, has occupied its current location since the early 1970's. The property was

formerly home to HMS Machine Shop. HMS manufactured aircraft parts in the early 1960's and ceased operations in 1969.

The Carney Street Wellfield was operated continuously by the City of Glen Cove from 1950 to 1977 when the discovery of volatile organic compounds in water samples resulted in their closure. The Wellfield property is also occupied by the City's Water Department, Emergency Medical Services, and is home to a day care center which was constructed in 1989, and expanded in 1992.

3.3 Previous Investigations

Several environmental assessments and investigations have been performed on industrial locations in the Sea Cliff Avenue Area. These investigations have been conducted by various governmental agencies including the United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), and both the Nassau County Departments of Public Works and Health. Individual site assessments have also been conducted by a number of the property owners. These investigations have been conducted to determine on-site quality of soil and groundwater and to facilitate the sale of certain properties.

The Nassau County Department of Public Works, Hazardous Waste Services Unit, has been provided with the non-confidential portions of several government and private party reports by the New York State Department of Environmental Conservation's Bureau of Hazardous Site Control. Most of the documents deal with environmental conditions at specific

industrial locations within the site. One document, "Report on Groundwater Conditions at the former Kollmorgen Property, Glen Cove, New York", was prepared by Geraghty and Miller, Plainview, N.Y., in June of 1989. It provided a technical review of existing data compiled by Holtzmacher, McLendon and Murell, Melville, N.Y., (H2M) consultants and environmental conditions at the Kollmorgen property which is currently owned by Photocircuits Corporation. Conclusions from this report are summarized below:

- Groundwater samples collected from wells on the Photocircuits site indicate that both shallow and deep zones of the Upper Glacial Aquifer have been impacted by halogenated and nonhalogenated volatile organic compounds.
- The highest concentrations of halogenated and nonhalogenated volatile organic compounds occur in shallow groundwater monitoring wells MW-2, MW-3 and MW-7.
- Volatile halogenated organic compounds were detected in soil samples collected from the unsaturated zone in on-site soil borings.
- Local vertical hydraulic gradients beneath Photocircuits' property were determined to be greater than the natural gradient found in the study area. This is believed to have been caused by the use of a non-contact cooling water system.
- Groundwater quality at the site has been impacted by historic chemical usage, and the former operation of the non-contact cooling water system has spread contaminants throughout the Upper Glacial Aquifer.

A second site specific study examined environmental conditions at the Pall Corporation facility. The report, "Phase I Environmental Assessment Report 30 Sea Cliff Avenue

Glen Cove, New York", was prepared for Pall Corporation by H2M in October of 1989. This report identified several possible on-site sources of contamination including several diffusion wells. An on-site supply well and waste water collection sump were sampled and analyzed for total metals and VOC's on August 28, 1989. The supply well sample had elevated levels of lead, 1,1-Dichloroethane, 1,2-Dichloroethene, chloroform, 1,1,1-Trichloroethane, Trichloroethene and Tetrachloroethene. The sump discharge sample had elevated levels of lead, 1,2-Dichloroethene and Trichloroethene. The report concluded that groundwater contamination exists beneath the site, and it was recommended that a groundwater investigation program be conducted at the Pall Corporation facility.

The remainder of the site specific environmental information used in this preliminary site assessment (PSA) was obtained following the review of portions of two "Source Area Investigations" prepared by H2M Consultants. The first was prepared for the City of Glen Cove's Carney Street Wellfield property in October of 1991. Data from this document indicated that shallow soils in the vicinity of Carney Street Wellfield have been impacted by both halogenated and non-halogenated volatile organic compounds. No groundwater data was provided with this report.

However, a second report prepared in 1993 by the environmental consulting firm of Fanning, Phillips and Molnar, Ronkonkoma, N.Y. (FP&M) did provide groundwater data

from two temporary wells. Groundwater samples collected from these wells confirmed the presence of both halogenated and non-halogenated volatile organic compounds.

The other H2M Source Area Investigation was prepared for the Sea Cliff Avenue Industrial Area in September 1992. This document contains soil and groundwater data for all five industries studied in this assessment, with the exception of the Associated Drapery property. Information from the Sea Cliff Avenue Source Area Investigation provides the basis for analysis in each of the Individual Site Assessments for the remaining four properties.

Overall groundwater quality beneath the Sea Cliff Avenue Industrial Area was examined in a report, which was prepared jointly by the Nassau County Departments of Public Works and Health. This report, "Investigation of Contaminated Aquifer Segment, City of Glen Cove, Nassau County, New York", was prepared in June 1990. The report examined both shallow and deep groundwater quality in the vicinity of the Carney Street Wellfield and the five industrial locations named in this Preliminary Site Assessment. Although, it did not evaluate actual on-site conditions at any of the facilities, its findings are consistent with those of the site specific investigations. The County report identified contamination throughout the Upper Glacial aquifer in the vicinity of the Sea Cliff Avenue Industrial Area. A water table plume of volatile organic compounds was identified, which bifurcates away from the source area to the west and the north to a

minimum distance of 2,400 feet. Total VOC concentrations in this plume range up to 5,500 ug/l immediately downgradient of the industrial area.

The deep upper glacial portion of the plume identified in the report has migrated a minimum distance of 2,400 feet in a northwesterly direction. A VOC plume was detected at the base of the upper glacial aquifer at concentrations ranging from 79 ug/l to 698 ug/l.

The specific volatile organic compounds detected in groundwater collected from both plumes are common to those reported in industrial surveys for the study area and include Tetrachloroethene, Trichloroethene, and 1,1,1-Trichloroethane. Breakdown products produced by biotransformation were also identified. These include cis-1,2-Dichloroethene, Dichloroethene, 1,1-Dichloroethane and Vinyl Chloride.

The Nassau County report also identifies the re-circulation of non-contact cooling water within the aquifer as a contributing factor in the deep migration of volatile organic compounds. The report concludes that historic chemical usage in the industrial area has contributed to the development of both the shallow and deep groundwater plumes.

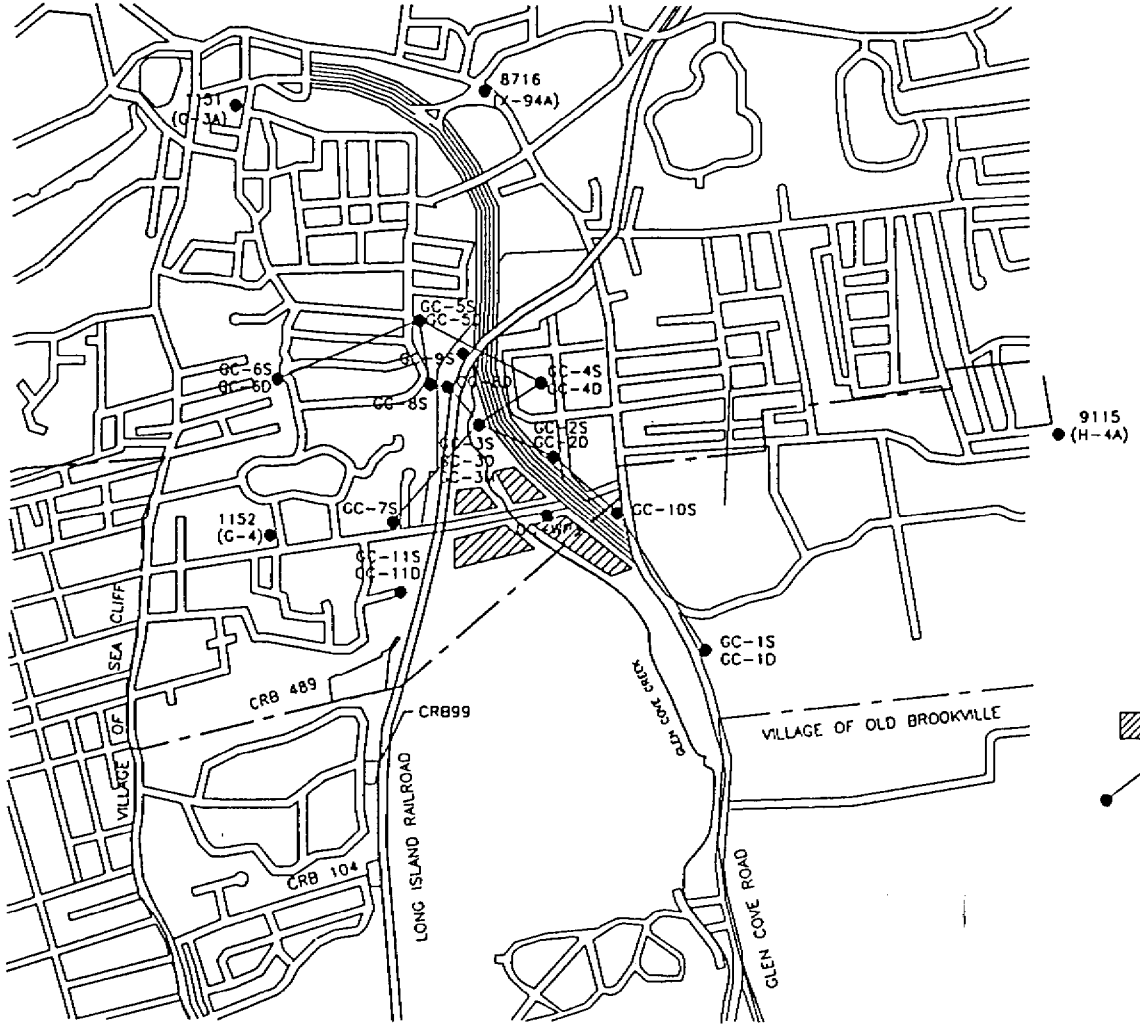
3.4 Site Geology

The overall geology and general stratigraphy of the sediments underlying the Sea Cliff Avenue Industrial Area can be described by reviewing geologic cross-sections which were produced for the study area as part of the joint contaminated

Aquifer Segment (CAS) investigation performed by the Nassau County Departments of Public Works and Health. The investigation was completed in June 1990. It included the construction of twenty-one groundwater monitoring wells. Soil borings from these wells were used to determine the nature of sediments in both the shallow and deep portions of the upper glacial aquifer.

Review of the geologic cross sections produced for the CAS investigation (Figure 2) indicates that the section completed through borings from wells GC-1 thru GC-8 provides an accurate subsurface profile of the stratigraphy of sediments which occur parallel to the reported direction of groundwater flow (north-northwest) in the study area. This section also runs parallel to Glen Cove Creek, and is adjacent to the industrial Area and the Carney Street well field.

Figure 3, depicts the geology along this section, which indicates that three hydrostratigraphic units can be described for the area beneath the Sea Cliff Avenue Industrial Area. The first unit is an upper glacial till which is composed of both silty and sandy facies along the section. This unit is immediately underlain by a sand and gravel unit of varying composition, which is in turn underlain by the Port Washington confining unit. The Port Washington confining unit is composed of a sandy clay and clay which forms the base of the upper glacial aquifer in the area.



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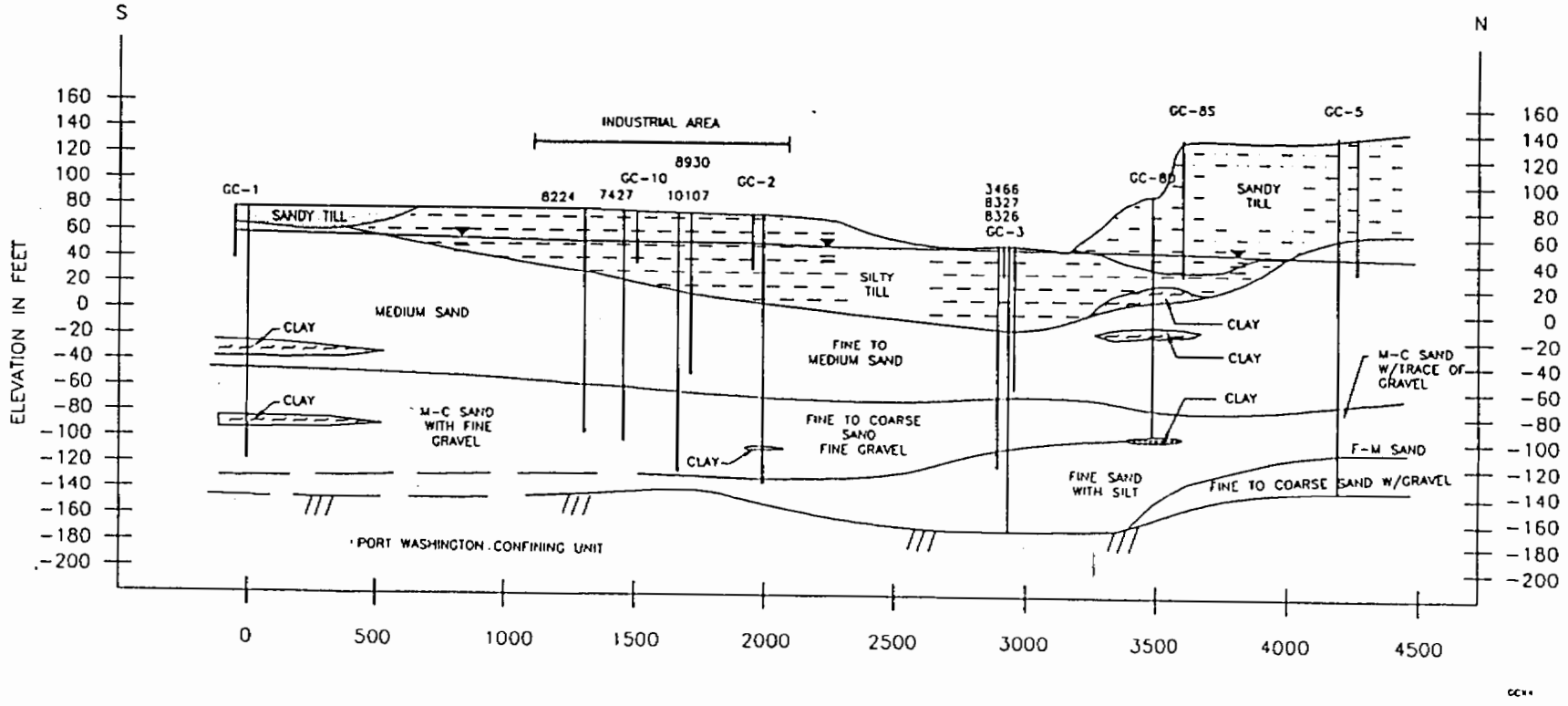
NO.	REVISION DESCRIPTION	DATE
		9/13/89
A	FOR INFORMATION ONLY	3/22/89

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS
SANITATION & WATER SUPPLY

FIGURE 2
GLEN COVE STUDY AREA
MONITORING WELL LOCATION

HAZARDOUS WASTE UNIT	DRAWN BY J.SIWANIT	DATE 3/22/89	SHEET NO 1 OF 1

FIGURE 3
GEOLOGIC CROSS SECTION
WELLS GC-1 THRU GC-8



The upper glacial till ranges in thickness from 12 to 126 ft in the borings completed during the CAS investigation. The silty till facies immediately underlies the industrial area and reaches a maximum thickness of approximately 80 feet. The silty till facies has been described as a silty, clayey, fine-medium sand with gravel, cobbles and occasional boulders; it is considered a very low permeability unit.

Underlying the upper glacial till is an interbedded sand and sand and gravel formation of moderate to high permeability, with occasional lenses of silt. The overall thickness of this unit is reported to be as much as 216 feet. However, it reaches a maximum thickness of 110 feet beneath the study area.

The Port Washington confining unit is an areally extensive clay which underlies the study area and occurs at a depth of approximately 200 feet below land surface.

3.5 Water Level Measurements and Site Hydrogeology

The local hydrogeologic system for the Sea Cliff Industrial Area site can be mapped using water level measurements obtained from the twenty-one existing onsite groundwater monitoring wells and several offsite wells in the vicinity of the six locations under investigation. Following proper identification, the measuring point elevation at the top of the casing for each of the monitoring wells was measured to within 0.01 feet relative to mean sea level by Nassau County surveyors. Once the surveyed elevations were

obtained, the depth to water in each of the wells was measured to within 0.01 feet using an electronic water level indicator.

Three comprehensive water level rounds were conducted for the site. The first round of measurements was collected in conjunction with surveying activities by NCDPW hydrogeologists from Friday, June 11, 1993, through Wednesday, June 16, 1993. Although this round of measurements was not synoptic in nature, it was used to provide a preliminary indication of groundwater flow in the study area. Data from this water level round is provided in Table 1.

Review of the data in Table 1 indicates that local depth to water measurements range from a low of 1.47 feet in well MW-2A located adjacent to Glen Cove Creek on the August Thomsen site to a high of 9.58 feet below grade in well MW-1S which is located at the Pass and Seymour facility. Groundwater monitoring well MW-6, which is located on Photocircuits property was found to be partially buried and unprotected. Since the well was unprotected and damaged, water levels from this well were considered suspect and were not included in this data set. The depth to water measurements collected from the remaining wells in this preliminary round were converted to water elevations at each well location and contoured across the site, these contours are presented in Figure 4.

The contoured elevation data presented in Figure 4

Table 1

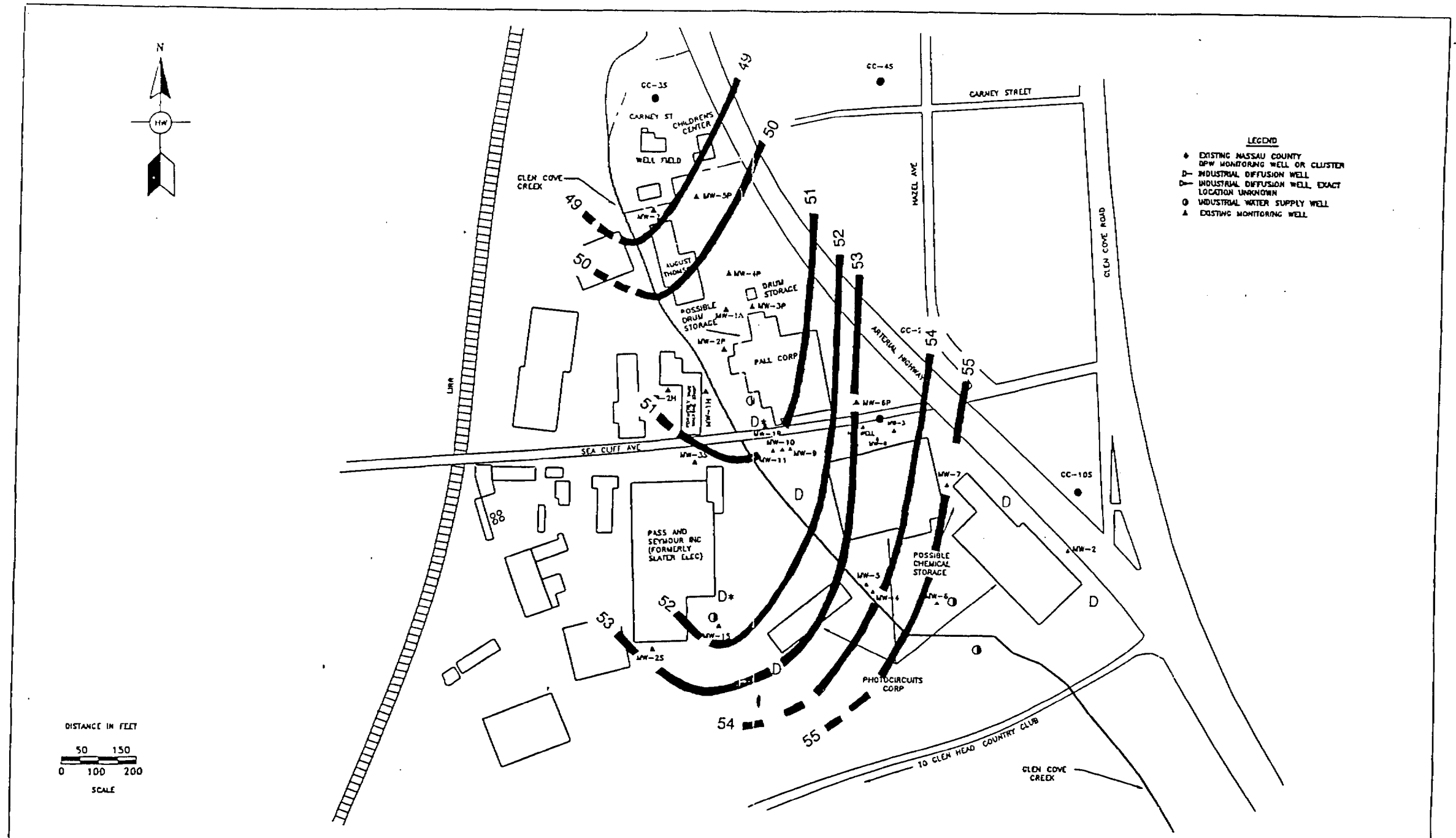
SEA CLIFF AVENUE INDUSTRIAL AREA EXISTING GROUNDWATER MONITORING WELLS WITH GROUNDWATER ELEVATIONS 6/11–16/93

FACILITY	WELL NO.	MEASURING POINT ELEV.	DEPTH TO WATER	TOTAL DEPTH	DATE	WATER TABLE ELEVATION
August Thomsen	MW–1A	53.67	3.26	12.05	06/11/93	50.41
	MW–2A	50.18	1.47	14.00	06/11/93	48.71
Pall Corporation	MW–1P	55.91	4.95	15.20	06/11/93	50.96
	MW–2P	54.36	3.81	14.78	06/11/93	50.55
	MW–3P	53.73	3.17	15.25	06/11/93	50.56
	MW–4P	52.77	2.55	24.03	06/11/93	50.22
	MW–5P	51.36	1.55	13.49	06/11/93	49.81
	MW–6P*	56.82	3.72	57.94	06/11/93	53.10
Pass and Seymour	MW–1S	61.49	9.58	20.62	06/14/93	51.91
	MW–2S	60.38	7.44	20.71	06/14/93	52.94
	MW–3S	59.24	7.95	18.73	06/14/93	51.29
Photocircuts Inc.	MW–1	-----WELL COULD NOT BE LOCATED----------				
	MW–2 (2")	61.92	7.18	24.62	06/16/93	54.74
	MW–3 (2")	58.30	4.95	18.98	06/16/93	53.35
	MW–4 (2")	57.12	3.14	23.66	06/16/93	53.98
	MW–5 (2")	57.06	3.23	99.32	06/16/93	53.83
	MW–6 (2")	58.51	3.30	13.45	06/16/93	55.21
	MW–7	59.46	4.30	23.37	06/16/93	55.16
	MW–8	58.50	6.20	169.30	06/16/93	52.30
	MW–9	57.99	6.90	27.57	06/16/93	51.09
	MW–10	57.91	6.03	130.27	06/16/93	51.88
	MW–11	57.96	6.20	170.00	06/16/93	51.76

* Well Not Included In H2M Data Set

** NOTE: Photocircuts Well MW–6 is Unprotected

SEACLIFF.WK3



			FILE NAME: \DWG\GCIND	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT	FIGURE 4 WATER LEVEL CONTOURS 6/11/93–6/16/93 GLEN COVE INDUSTRIAL AREA GLEN COVE, NEW YORK
			SCALE: AS SHOWN	DWG. NO.	DRAWN BY: J.ZIMMET	DATE 4/21/93		
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M.FLAHERTY	DATE 4/13/93	CHECKED BY: S.URBAN	DATE 4/22/93		
NO.	REVISION DESCRIPTION	DATE						

indicates that groundwater flows from southeast to northwest in the shallow portion of the upper glacial aquifer beneath the Sea Cliff Avenue Industrial Area. Groundwater contours are modified by the presence of Glen Cove Creek which acts as a discharge area for the local topographic highs in the groundwater system. The contours bend in an arcuate pattern toward the south, creating a slight northeasterly component of flow on the west side of the creek and a slight northwesterly component on the eastern side of the creek.

Horizontal groundwater flow gradients across the site were calculated and found to range from 0.005 ft/ft to 0.01 ft/ft. This variation in horizontal gradient may be caused by the presence of a local till unit beneath the site. The till is composed of both a silty and sandy facies. Both facies are considered to be of low permeability. Those portions of the aquifer with a higher percentage of sand would tend to have slightly higher horizontal conductivity, and correspondingly lower gradient.

Water level data for the second comprehensive round was collected across the industrial area by NCDPW hydrogeologists on Tuesday, July 27, 1993 (Table 2). This round was conducted over a period of five hours and can be considered synoptic. Review of groundwater monitoring well data collected during preparation of the June 1990 Contaminated Aquifer Segment Report indicated that several nearby County wells installed for that study could be added to the current data base. Therefore, groundwater monitoring wells GC-2S,

Table 2

SEA CLIFF AVENUE INDUSTRIAL AREA EXISTING GROUNDWATER MONITORING WELLS WITH GROUNDWATER ELEVATIONS 7/27/93

FACILITY	WELL NO.	MEASURING POINT ELEV.	DEPTH TO WATER	TOTAL DEPTH	DATE	WATER TABLE ELEVATION
August Thomsen	MW-1A	53.67	3.73	12.05	07/27/93	49.94
	MW-2A	50.18	1.71	14.00	07/27/93	48.47
Pall Corporation	MW-1P	55.91	5.30	15.20	07/27/93	50.61
	MW-2P	54.36	4.20	14.78	07/27/93	50.16
	MW-3P	53.73	3.65	15.25	07/27/93	50.08
	MW-4P	52.77	3.01	24.03	07/27/93	49.76
	MW-5P	51.36	2.02	13.49	07/27/93	49.34
	MW-6P*	56.82	4.33	57.94	07/27/93	52.49
Pass and Seymour	MW-1S	61.49	10.17	20.62	07/27/93	51.32
	MW-2S	60.38	7.87	20.71	07/27/93	52.51
	MW-3S	59.24	8.40	18.73	07/27/93	50.84
Photocircuits Inc.	MW-1	-----WELL COULD NOT BE LOCATED----------				
	MW-2 (2")	61.92	7.73	24.62	07/27/93	54.19
	MW-3 (2")	58.30	5.24	18.98	07/27/93	53.06
	MW-4 (2")	57.12	3.52	23.66	07/27/93	53.60
	MW-5 (2")	57.06	3.41	99.32	07/27/93	53.65
	MW-6 (2")	58.51	3.70	13.45	07/27/93	54.81
	MW-7	59.46	4.70	23.37	07/27/93	54.76
	MW-8	58.50	6.48	169.30	07/27/93	52.02
	MW-9	57.99	6.97	27.57	07/27/93	51.02
	MW-10	57.91	6.27	130.27	07/27/93	51.64
	MW-11	57.96	6.41	170.00	07/27/93	51.55
Nassau County Observation Wells	GC-2S	74.80	18.62	39.00	07/27/93	56.18
	GC-3S	51.98	4.70	24.00	07/27/93	47.28
	GC-3D	52.48	3.54	200.00	07/27/93	48.94
	GC-7S	120.51	71.02	100.00	07/27/93	49.49
	GC-10S	76.41	22.56	40.00	07/27/93	53.85

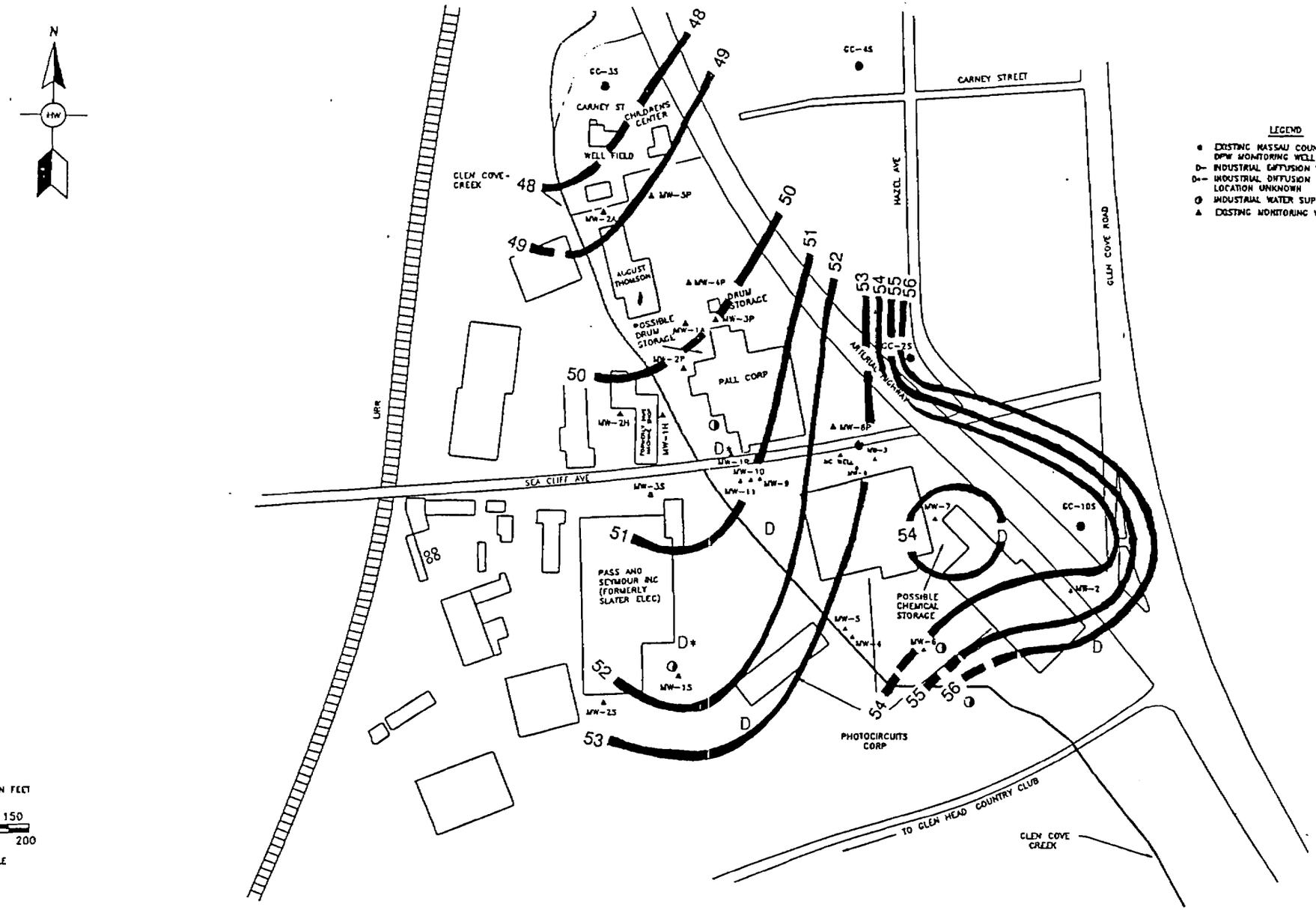
• Well Not Included In H2M Data Set

** NOTE: Photocircuts Well MW-6 is Unprotected

SEACLIF2.WK3

GC-3S & D, GC-7S and GC-10S were added to this round. The collected data was contoured in the same manner as the first round data and is presented in Figure 5. The July contour map revealed similar water table elevations, however the addition of Nassau County observation wells GC-2S and GC-10S improved the resolution of the contours along the eastern and southern margins of the map. The additional data points revealed a steep groundwater gradient associated with the local topographic highs along the arterial highway and a localized groundwater mound in the vicinity of Photocircuits monitoring well MW-7. The water level in well MW-7 was found to be 0.90 to 1.70 feet higher than the three closest monitoring wells, MW-3, MW-4 and GC-10S. This localized mound may be the result of some unknown form of on-site discharge or leak associated with shallow underground piping in the vicinity of MW-7. The mound may also be attributed to natural geologic phenomenon. A shallow clay or till unit in close proximity to the screened interval for MW-7 would affect water level measurements taken from this well.

The final round of groundwater measurements were collected by NCDPW hydrogeologists on Tuesday, November 9, 1993. This round included water levels collected from wells MW-1H and MW-2H, which were installed on Associated Drapery (formerly HMS Machine Shop) property in September 1993. The round also included water level measurements collected from County well GC-4S. All water level measurements collected from this round are presented in Table 3.



			FILE NAME: \DWG\GCIND	CONTRACT NUMBER:		SHEET NO: 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT	FIGURE 5 WATER LEVEL CONTOURS 7/27/93 GLEN COVE INDUSTRIAL AREA GLEN COVE, NEW YORK
			SCALE: AS SHOWN	DWG NO:	DRAWN BY: J.ZIMMET	DATE: 4/21/93		
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M FLAHERTY	DATE: 4/13/93	CHECKED BY: S URBAN	DATE: 4/22/93		
NO.	REVISION DESCRIPTION	DATE						

Table 3

SEA CLIFF AVENUE INDUSTRIAL AREA EXISTING GROUNDWATER MONITORING WELLS WITH GROUNDWATER ELEVATIONS 11/9/93

FACILITY	WELL NO.	MEASURING POINT ELEV.	DEPTH TO WATER	TOTAL DEPTH	DATE	WATER TABLE ELEVATION
August Thomsen	MW-1A	53.67	3.72	12.05	11/09/93	49.95
	MW-2A	50.18	1.95	14.00	11/09/93	48.23
Pall Corporation	MW-1P	55.91	5.37	15.20	11/09/93	50.54
	MW-2P	54.36	4.15	14.78	11/09/93	50.21
	MW-3P	53.73	3.55	15.25	11/09/93	50.18
	MW-4P	52.77	3.06	24.03	11/09/93	49.71
	MW-5P	51.36	2.06	13.49	11/09/93	49.30
	MW-6P*	56.82	4.69	57.94	11/09/93	52.13
Pass and Seymour	MW-1S	61.49	10.60	20.62	11/09/93	50.89
	MW-2S	60.38	8.25	20.71	11/09/93	52.13
	MW-3S	59.24	8.60	18.73	11/09/93	50.64
Photocircuits Inc.	MW-1	-----WELL COULD NOT BE LOCATED----------				
	MW-2 (2")	61.92	8.26	24.62	11/09/93	53.66
	MW-3 (2")	58.30	5.60	18.98	11/09/93	52.70
	MW-4 (2")	57.12	3.61	23.66	11/09/93	53.51
	MW-5 (2")	57.06	3.86	99.32	11/09/93	53.20
	MW-6 (2")	58.51	3.66	13.45	11/09/93	54.85
	MW-7	59.46	5.08	23.37	11/09/93	54.38
	MW-8	58.50	6.93	169.30	11/09/93	51.57
	MW-9	57.99	7.13	27.57	11/09/93	50.86
	MW-10	57.91	6.65	130.27	11/09/93	51.26
	MW-11	57.96	6.86	170.00	11/09/93	51.10
Nassau County Observation Wells	GC-2S	74.80	19.26	39.00	11/09/93	55.54
	GC-2D	74.39	20.43	222.00	11/09/93	53.96
	GC-3S	51.98	4.95	24.00	11/09/93	47.03
	GC-3D	52.48	4.10	200.00	11/09/93	48.38
	GC-4S	88.44	36.35	55.00	11/09/93	52.09
	GC-4D	88.75	36.75	229	11/09/93	52.00
	GC-10S	76.41	23.14	40.00	11/09/93	53.27
ASSOCIATED DRAPERY	MW-1H	58.04	7.65	26.00	11/09/93	50.39
	MW-2H	58.34	7.99	27.00	11/09/93	50.35

* Well Not Included In H2M Data Set

** NOTE: Photocircuits Well MW-6 is Unprotected

SEACLIF3.WK3

The groundwater elevations presented in the table were contoured across the site and are depicted in Figure 6. The November contour map revealed similar groundwater elevations and duplicated the overall configuration of the water table. The steep hydraulic gradient observed near monitoring well GC-2S was found to extend further to the north. The local groundwater mound located in the vicinity of MW-7 was also observed. In an effort to verify the measurements collected in monitoring well MW-7, it was re-surveyed by Nassau County surveyors and found to be within 0.01 feet of the original measurement.

			FILE NAME: \DWG\GCIND		CONTRACT NUMBER:		SHEET NO 1 OF 1
			SCALE: AS SHOWN	DWG NO.	DRAWN BY: J.ZIMMET	DATE 4/21/93	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT
1	ORIGINAL RELEASE	12/1/93	DESIGNED BY M FLANERTY	DATE 4/13/93	CHECKED BY. S.URBAN	DATE 4/22/93	
NO.	REVISION DESCRIPTION	DATE					

FIGURE 6
WATER LEVEL CONTOURS
11/9/93
GLEN COVE INDUSTRIAL AREA
GLEN COVE, NEW YORK

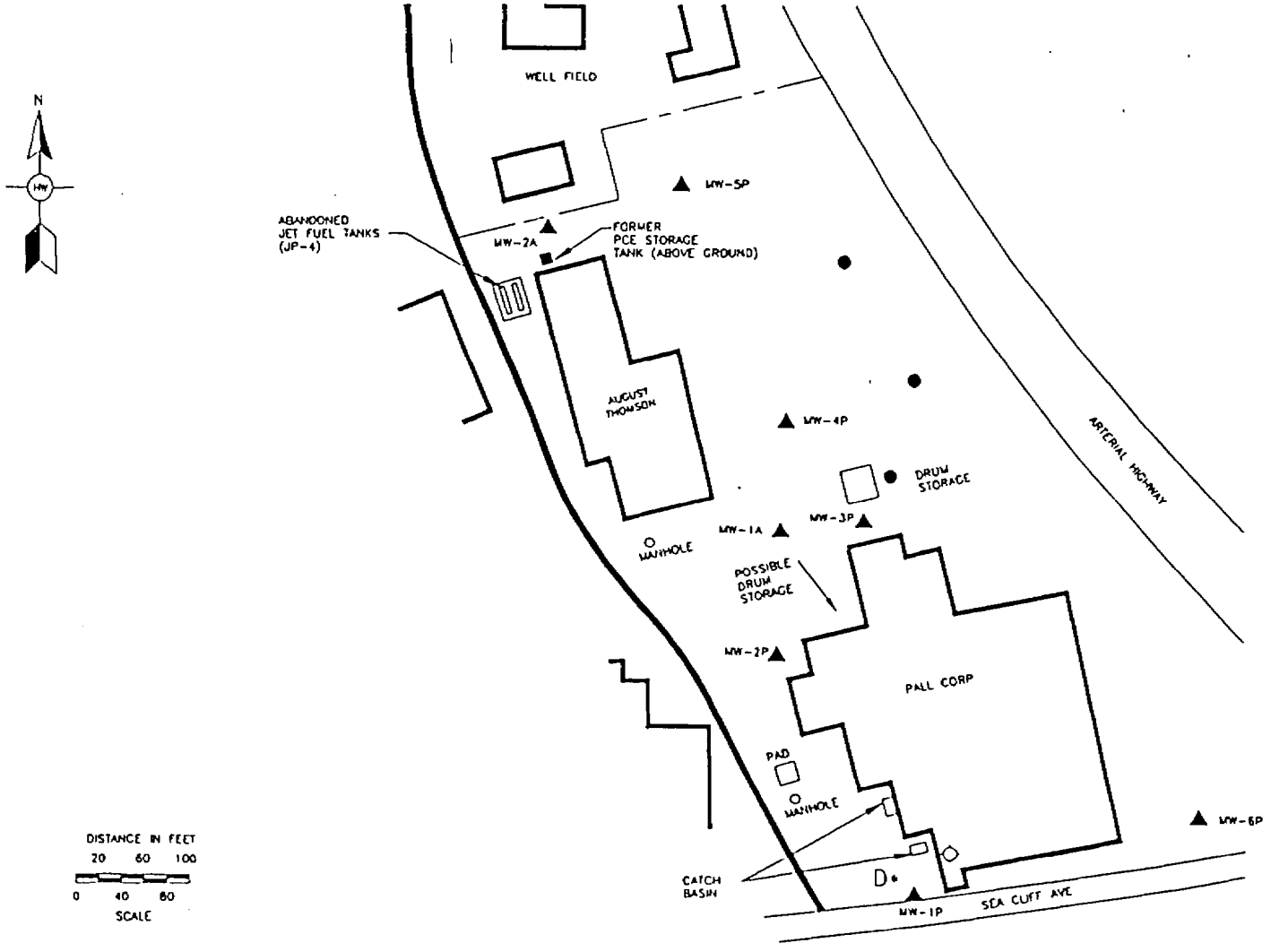
4.0 Scope of Work

4.1 Individual Site Inspections

In order to evaluate the possible relationship between commercial or municipal activities at each of the sites and any potential soil or groundwater contamination discovered during the preliminary site assessment, inspections were conducted at each facility. The inspections were conducted with personnel who were familiar with the nature of production at each industrial location, and included both indoor and outdoor facilities. Indoor inspections included review of any production activities, drainage and chemical and bulk material storage practices which might contribute to a potential environmental impact. Outdoor inspections focused on surface runoff and associated drainage; the location of any drywells, catchbasins or surface impoundments were also noted. The outdoor inspections also examined any exterior chemical storage facilities including storage sheds and tank farms. Inspectors tried to identify any production, diffusion or groundwater monitoring wells which might be located on the five industrial sites.

Pall Corporation

Pall Corporation is located at 30 Sea Cliff Avenue, Glen Cove. The facility lies on the north side of Sea Cliff Avenue, and it is bordered by the Glen Cove arterial highway to the east, Glen Cove Creek to the west, and the Carney Street Wellfield to the north (Figure 7). The facility was



			FILE NAME: \DFG\CCPALL	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT
			SCALE: AS SHOWN	DWG. NO	DRAWN BY: J.ZIMMET	DATE 4/28/93	FIGURE 7 SITE PLAN PALL CORPORATION/AUGUST THOMSEN GLEN COVE, NEW YORK
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: K.STOKES	DATE 4/27/93	CHECKED BY: K.ARNOLD	DATE 4/29/93	
NO.	REVISION DESCRIPTION	DATE					

inspected by Nassau County Department of Public Works, Hazardous Waste Services Unit personnel on Wednesday, May 5, 1993.

The building used by Pall Corporation at this location is a two-story masonry structure which contains office, laboratory and some small scale production facilities. The bulk of production activities at this site are reported to have ceased approximately 12 years ago. The indoor inspection began with a tour of the blood lab, which is used to test filter media for biological applications. This lab is used exclusively for research and development. The next area examined was the fiber pilot facility, which is used to test filter papers. Deionized water and cellulose are the bulk materials used in this facility. The deionized water is produced by treating Glen Cove City water in an onsite deionization plant, no onsite production wells are used to supply water for this process. The microbiology lab was also examined, activities in the lab are restricted to counting particulates on test filters with a scanning electron microscope.

The last interior facility to be inspected was the Research and Development Casting Room. This area is used to coat mylar films with various resins. Feeder tanks supply the casting room with Dimethyl Acetamide, which is used as a high purity solvent for the resins. Deionized water is also used in this process. Process water is then neutralized in holding tanks prior to eventual discharge into the City of

Glen Cove sewer system.

The outdoor inspection identified two catch basins on western side of the building, one of which was located at the base of a loading dock. A single manhole cover next to a concrete pad was also identified on the west side of the building, however, the manhole is believed to be part of the sewer connection for the building. A single on-site production well was identified by Pall personnel. The well is believed to be approximately 250 feet deep.

The Nassau County Department of Public Works inspection team positively identified six groundwater monitoring wells on the Pall Site (Figure 7). Two wells MW-1P and MW-6P, could provide upgradient water quality and groundwater elevation data. Monitoring wells MW-2P and MW-3P were located downgradient of the research and development laboratory and the casting room. Monitoring well MW-4P was believed to be downgradient of an outdoor chemical storage shed and well MW-5P was located at the northern end of the property. Three circular depressions were also identified in the northeastern portion of the parking lot which could represent abandoned diffusion wells or borings.

August Thomsen

The August Thomsen site is located on the northern side of Sea Cliff Avenue. The property is immediately adjacent to Pall Corporation on the south and east, and bounded by Glen Cove Creek to the west and the Carney Street wellfield to the

north (Figure 7). The NCDPW inspection of the single story brick structure was conducted on Tuesday, May 25, 1993. August Thomsen produces pastry bags and tubes at this facility. The indoor inspection began with a tour of a large storage area and an assembly area where stock material is cut and sealed for use in pastry bag manufacturing.

The next part of the building to be inspected was the "wash room". This room contains tanks of acids and bases which are used to wash nickel/silver pastry tubes in order to remove solder flux. Spent materials from this process are stored in plastic-lined drums and removed by licensed haulers. Wash materials observed included: Nitric acid, acetic acid, phosphoric acid, sulfuric acid and calcium hydroxide. The total system is reportedly drained every 4-5 months. PVC drain lines with open valves were observed leaving the tanks. The lines are reported to be connected to the municipal sewer. A production area was also observed in the building. Sheet metal stock is pressed and rolled in this area using mechanical brakes. The tubes which are produced here are then soldered using Envirosafe solder. A second smaller storage area was observed in the northern end of this building. This area was reported to be a former degreasing/tumbling room when the facility was owned by Pall Corporation. There were no active floor drains observed in this area.

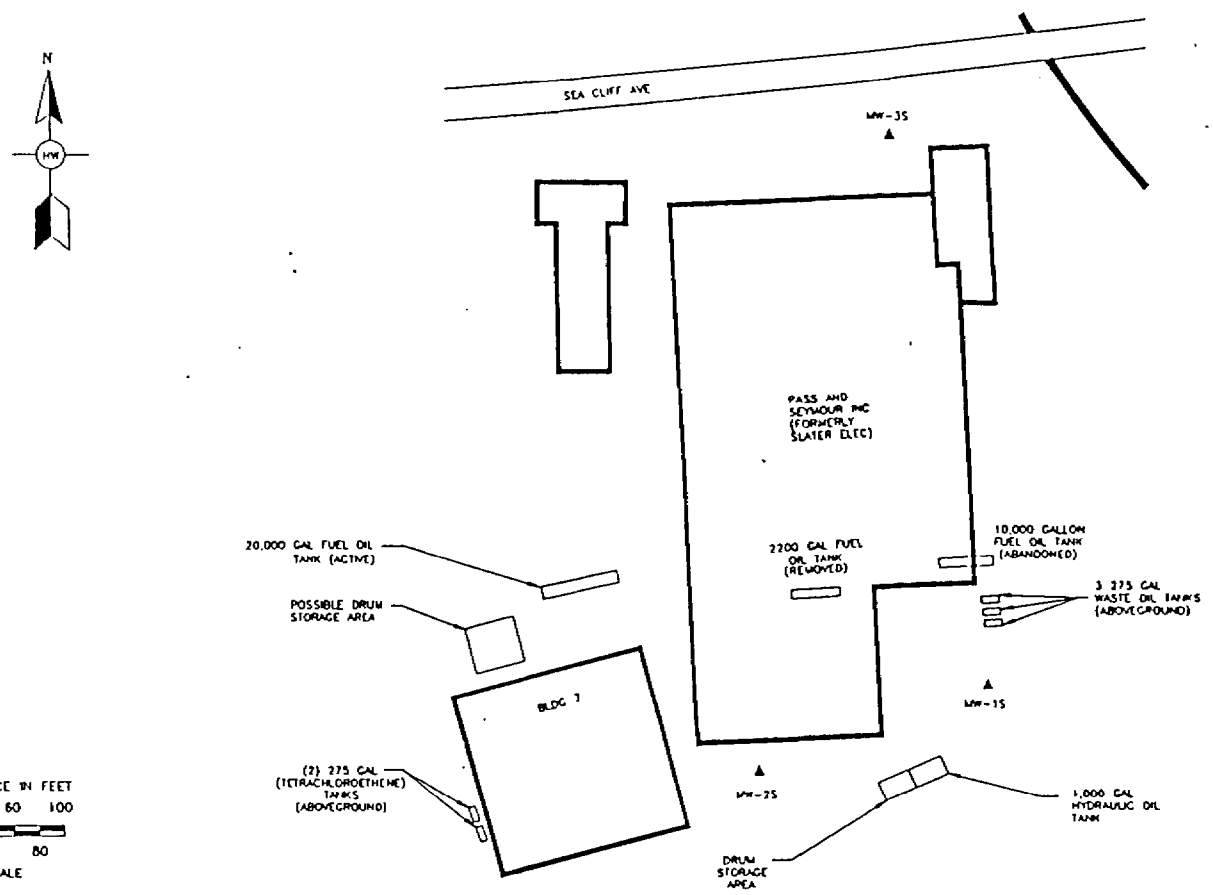
The outdoor inspection revealed the presence of two groundwater monitoring wells. Well MW-1A is located off the

southeast corner of the building between Pall and the August Thomsen property. Well MW-2A was identified on the northern end of the building, outside the former degreasing area, referenced above (Figure 7). An August Thomsen employee identified the former location of an above ground Tetrachloroethene tank (Figure 7). A concrete pad was also identified on the northwest corner of the building. This pad is all that remains of a former compressor building. Two abandoned jet fuel tanks (JP-4) are reported to be located beneath the pad. The tanks were reportedly cleaned and filled with sand around 1987. Tank abandonment documentation is reported to exist.

Pass and Seymour (Formerly Slater Electric Company)

Pass and Seymour is located at 45 Sea Cliff Avenue. The facility is on the south side of the road and is bordered by several small businesses to the west, Glen Cove Creek to the east and Photocircuits Corporation to the south (Figures 1,8). Two buildings occupy the site; the main building which occupies the bulk of the property and contains production, storage and office space and a second smaller building (No. 7) which is located in the southwest corner of the property and is used primarily for production activities and storage of bulk materials (Figure 8).

Pass and Seymour was inspected by NCDPW Hazardous Waste Unit personnel on Tuesday, April 27, 1993. Pass and Seymour produces electric components including outlets, switches and



			FILE NAME: \DWG\GCPASS	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT	FIGURE 8 SITE PLAN PASS AND SEYMOUR GLEN COVE, NEW YORK
			SCALE: AS SHOWN	DWG. NO	DRAWN BY: J ZIMMET	DATE 6/22/93		
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M FLAHERTY	DATE 4/28/93	CHECKED BY: K ARNOLD	DATE 6/24/93		
NO.	REVISION DESCRIPTION	DATE						

wall boxes. These items are produced using an injection molding process. The indoor inspection began in the main building with a brief tour of the bulk storage area which contained drums of plastic pellets used in the injection molding process. Following the partial inspection of the main building, the outdoor inspection was initiated in southeast corner of the property.

The first area examined was the Hazardous Waste storage area which consisted of a diked concrete enclosure with two separate chambers (Figure 8). The first chamber contained a 1,000 gallon virgin hydraulic oil tank. The adjoining chamber was a grated storage area for drums of "die wash", which consists of naptha based hydrocarbons mixed with Tetrachloroethene.

Three additional 275 gallon above ground waste oil storage tanks were also identified in the southeast portion of the facility. These tanks were also surrounded by a concrete containment system. A single groundwater monitoring well MW-1S was located between the hazardous waste storage area and the waste oil tanks.

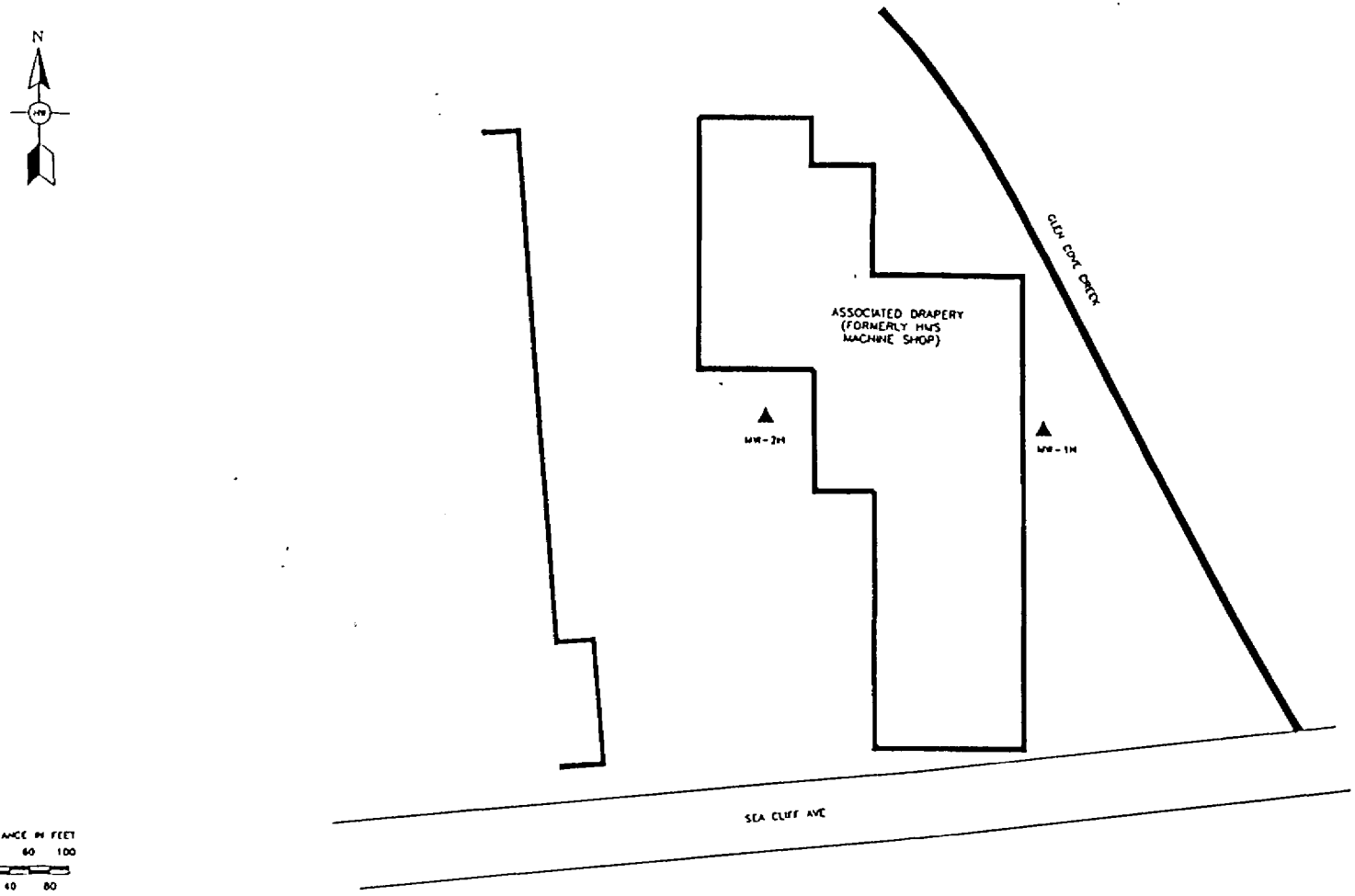
The outdoor inspection then proceeded to the area directly south of the main building. This portion of the facility included a fenced propane storage area with numerous bottles of gas. This part of the property was also a storage area for discarded equipment which included desks, pipe and miscellaneous debris. A manhole cover which is reported to mark the location of a single production well was noted in

this area along with a second groundwater monitoring well, MW-2S (Figure 8).

The inspection team proceeded to the area between the main building and building No. 7. This outdoor area consisted of an elevated earthen berm which was terraced. One level contained a number of empty 55 gallon drums; the second level covered the location of an active 20,000 gallon fuel oil tank. The fuel oil is used for heating the facility and the area is reported to be the site of a 1977 spill. Following the inspection of this area, the indoor inspection resumed with building No. 7. The first area examined in the building No. 7 was the indoor drum storage area. Here 55 gallon drums containing cutting oils used in manufacturing are stored. The manufacturing process was observed by the inspection team; and included a degreasing operation which requires the use of Tetrachloroethene. The feeder lines for the Tetrachloroethene led to two 275-gallons above ground tanks located outside the building in a concrete enclosure (Figure 7). The spent "wash" from this operation is placed in drums for eventual removal by a licensed hauler. Following the tour of building No. 7, an additional groundwater monitoring well MW-3S was identified in the northern parking lot.

ASSOCIATED DRAPERY (Formerly HMS Machine Shop)

The Associated Draperies site (Figure 9), was inspected by NCDPW personnel on Tuesday, April 27, 1993. The



			FILE NAME: \DWG\GCASSOC	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT
			SCALE: AS SHOWN	DWG. NO	DRAWN BY: J ZINNEY	DATE 11/18/93	
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M FLAHERTY	DATE 11/17/93	CHECKED BY: K ARNOLD	DATE 11/18/93	
NO.	REVISION DESCRIPTION	DATE					

FIGURE 9
SITE PLAN
ASSOCIATED DRAPERY
GLEN COVE, NEW YORK

single story brick structure houses a large volume of bulk fabrics. The only production activities conducted on site involve cutting and sewing of these materials. The indoor inspection did not reveal any indication of possible contamination related to the former owners (HMS Machine Shop) activities.

The outdoor inspection focused on any drainage features which may have received runoff from former industrial activities on the site. A single drain grate was located outside the garage door. This garage now provides an entrance to a large storage area. A second drain grate was also identified on the east side of the building near a loading dock. The nature of both drains is unknown.

PHOTOCIRCUITS CORPORATION (Formerly Kollmorgen Corp.)

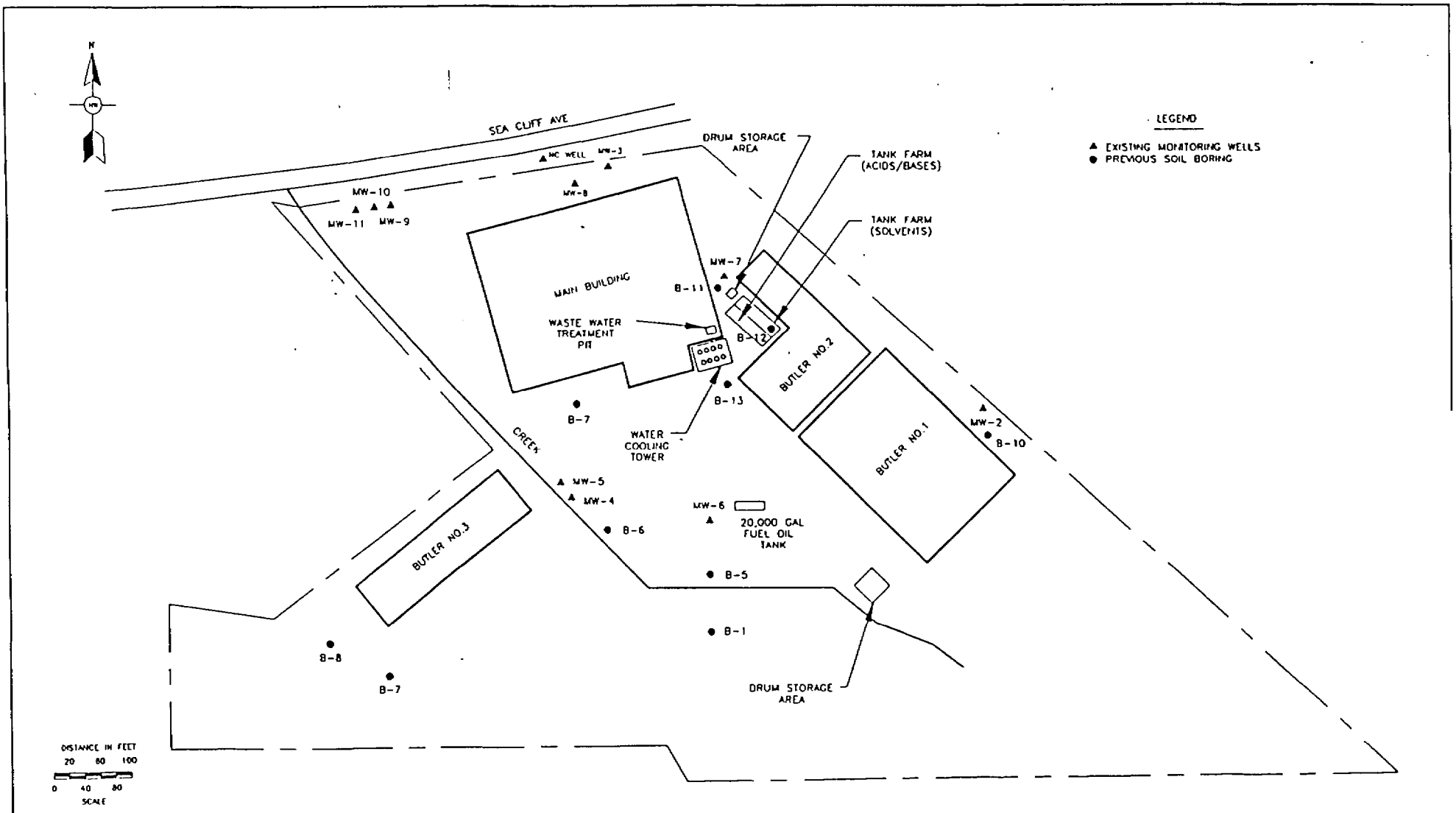
The Photocircuits Corporation is located on the south side of Sea Cliff Avenue. The site is comprised of four separate buildings. Three of the buildings are located on the east side of Glen Cove Creek. They are designated the main building, Butler Building No. 1 and Butler Building No. 2. The remaining building (Butler No. 3) is located on the west side of the creek. The Photocircuits site is bordered by Sea Cliff Avenue on the north, the arterial highway on the east, Pass and Seymour on the west and Glen Head Country Club to the south.

The inspection of the Photocircuits facility began outdoors, in the vicinity of Butler Building No. 3. No

groundwater monitoring wells or drainage features were observed in this area. A single two-inch diameter drainage pipe was observed near a foot bridge which crosses Glen Cove Creek. The source of this pipe was unknown. Two on-site production wells were located on the west side of Glen Cove Creek across from the drum storage area (Figure 10). These wells were rated at 700 and 1,000 gallons per minute (gpm), respectively. Both wells are currently out of service and are reported to have been replaced by a city water service approximately two years ago. The site has been on a "closed loop" circulation system since that time.

The drum storage area on the east side of Glen Cove Creek was examined and found to contain numerous drums of inorganic materials, mostly acids and bases. A 20,000 gallon above ground fuel oil storage tank was also located on the eastern side of the creek (Figure 10). The tank was enclosed in a concrete basin.

Two large gamma butyl 10-lactone tanks were observed outside the southeast wall of Butler Building No. 1. Lactone is a non-volatile solvent used for production activities in this building. According to Photocircuits' personnel, organic solvents are being phased out of the production process. The outdoor inspection proceeded to the area between Butler Building No. 2 and the main building. A tank farm was examined in this area (Figure 10). The tank farm included large tanks within a concrete enclosure; one side contained acids and bases while the adjoining side contained



			FILE NAME: \DWG\GCPHOTO	CONTRACT NUMBER:		SHEET NO. 1 OF 1	COUNTY OF NASSAU DEPARTMENT OF PUBLIC WORKS SANITATION & WATER SUPPLY HAZARDOUS WASTE SERVICES UNIT	FIGURE 10 SITE PLAN PHOTOCIRCUITS GLEN COVE, NEW YORK
			SCALE: 1"=80'	DWG NO	DRAWN BY: J.ZIMMET	DATE 6/21/93		
0	ORIGINAL RELEASE	12/1/93	DESIGNED BY: M.FLANERYY	DATE 6/1/93	CHECKED BY: K.ARNOLD	DATE 6/25/93		
NO.	REVESION DESCRIPTION	DATE						

solvents. A drum storage area was also identified at this location.

A total of ten groundwater monitoring wells were identified during the outdoor inspection. These included single wells in the vicinity of Butler Building No. 1, No. 2, and the 20,000 gallon fuel oil tank. A cluster of three wells of varying depth was also identified in the northwest corner of the property (Figure 10).

The remaining indoor inspection concentrated on the photo printing area in the main building. Solvents including Trichloroethene and Methylene Chloride are used in this area. Photocircuits is planning to change over to an aqueous system (no solvents), within the next few months.

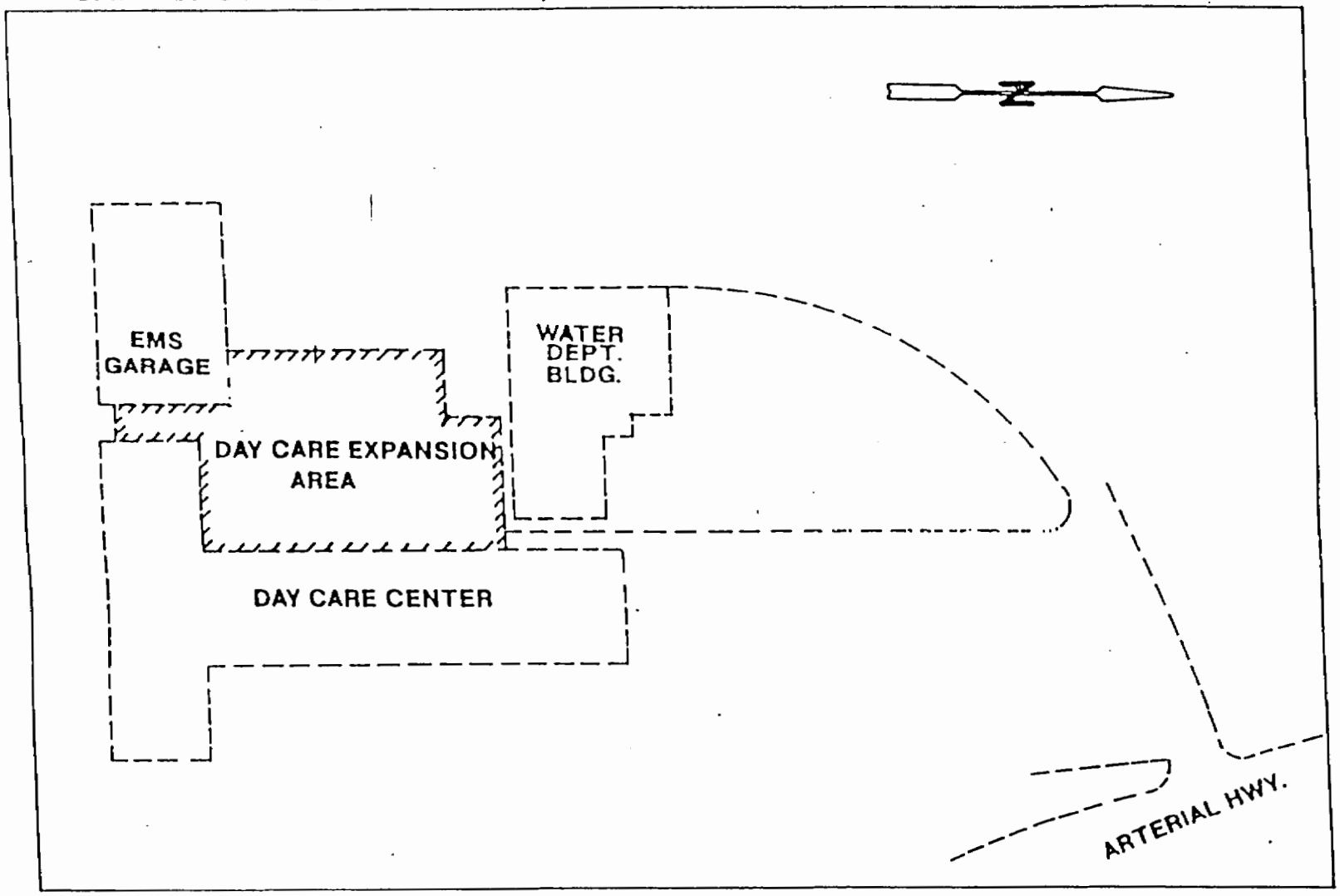
CARNEY STREET WELLFIELD

The Carney Street Wellfield property was inspected by NCDPW personnel on Tuesday, November 23, 1993. The Carney Street facility is located north of the five industrial sites previously examined in this section. It is bounded to the east by the Arterial Highway, to the west by Glen Cove Creek, and to the south by August Thomsen and Pall Corporation (Figure 11).

The Carney Street property contains two municipal facilities, the Glen Cove Water Department building and the Emergency Services Garage. There is also a separate Children's Day Care Center (Figure 11).

The Water Department building is reported to have been occupied since the early 1950's. The city of Glen Cove had

CARNEY STREET WELLFIELD / GLEN COVE DAYCARE CENTER PROPERTY



SCALE
1" = 50' (approx.)

FIGURE 11

Source: Fanning, Phillips & Molnar

operated three wells N-3466, N-8326 and N-8327 at various times at this location from approximately 1952 to 1977. The Water Department building was found to have two garage bays on its west side. Both bays appear to be used for vehicle storage rather than maintenance.

The Emergency Services Garage is reported to have been constructed in the mid-1970's. It houses emergency vehicles in three separate bays which are used on an around-the-clock basis. The facility does not appear to be used for vehicle repair and maintenance. During the inspection several fire hydrant parts were located on the west side of the building; however, no automotive parts or lubricant drums were observed.

The Day Care Center was constructed on Wellfield property in 1989 and subsequently expanded in 1992 (Figure 11). Inspection of the center did not reveal any maintenance facilities. A single stormwater catch basin was identified on the west side of the property. It appears to drain directly into Glen Cove Creek.

In summary, each of the industrial locations which were inspected currently appeared to be making every effort to properly contain and dispose of waste materials generated during the production process. There was no indication of improper waste disposal at any of the facilities which were visited. The single non-industrial site, the Carney Street Wellfield property, appeared to be properly maintained and devoid of any contaminant sources. However, it should be

noted that potential impacts to soil and groundwater in the industrial area are probably the result of past waste management practices which were far less stringent than those imposed today.

The six site inspections did provide insight into various activities at each location. They also enabled the inspection team to identify the locations of numerous groundwater monitoring wells, production wells and potential former sources of contamination.

4.2 Review of Existing Groundwater and Soil Quality Data

The site specific groundwater and soil quality data which forms the analytical basis for the preliminary site assessments at four of the five industries examined, was taken from two Source Area Investigations prepared by Holzmacher, McLendon and Murrell, P.C. (H2M) Consultants. This data was provided to the County by Morgan, Lewis and Backius, attorneys for Photocircuits Corporation, at the request of the New York State Department of Environmental Conservations' Bureau of Hazardous Site Control.

The first Source Area Investigation Report was prepared for a non-industrial location; the Carney Street Wellfield, October of 1991. The data provided to the Nassau County Department of Public Works, Hazardous Waste Services Unit, from this investigation, did not include any groundwater quality data. However, a second report prepared by Fanning, Phillips and Molnar in 1993 entitled "Soil Investigation at Carney Street Wellfield, Glen Cove, N.Y., did include water

quality information from two temporary wells.

The second Source Area Investigation Report was prepared for the Sea Cliff Avenue Industrial Area in September 1992. Both groundwater and soil quality data were provided to the NCDPW for industrial sites included in this PSA. Environmental data collected from Pass and Seymour, Pall Corporation, August Thomsen and Photocircuits Corporation were evaluated and compared to existing soil cleanup objectives and groundwater standards.

The two Source Area Investigation Reports provided to the NCDPW lacked site specific information which is commonly used in conjunction with soil and groundwater data needed to assess the overall environmental quality of a site. Typical information includes well construction specifications, geologic logs, water level data and soil and groundwater sampling protocols.

This evaluation is not intended to be as comprehensive as a full scale Remedial Investigation (RI) for a specific site, but it will evaluate contamination identified in the previous studies, with respect to current hydrogeologic conditions. Many of the gaps in the data can be filled by using existing geologic information from other reports in conjunction with current water level data collected for this Preliminary Site Assessment.

4.3 Selection of Monitoring Well Locations

In contrast to the other four industrial locations examined in this Preliminary Site Assessment, there was no

soil or groundwater quality data available from previous investigations for the Associated Drapery site. Therefore, it was necessary to collect environmental information through the drilling, installation and sampling of soil borings and groundwater monitoring wells.

Following a review of the site inspection notes for the Associated Drapery facility and the groundwater contours developed from the two comprehensive water level rounds (6/11 - 6/16/93, 7/27/93); three soil boring locations and two monitoring well sites were selected (Figure 9). Two of the soil borings were to be drilled in the boreholes for groundwater monitoring wells MW-1H and MW-2H. The third boring was drilled and backfilled.

Groundwater monitoring well MW-1H, was placed on the east side of the Associated Drapery building between a garage door and Glen Cove Creek (Figure 9). The selected location was within 10 feet of the building due to the presence of overhead electric wires and a large transformer. It had also been reported that wastes may have been spilled near this location by the former owners of the building (HMS Machine Shop). The location for individual soil boring B-1H was also on the east side of the building, approximately eight feet from a drain and drywell located at the base of a former loading dock (Figure 9). Based upon review of groundwater contours for the area, both locations were believed to be hydraulically downgradient of the facility.

The location of groundwater monitoring well MW-2H, was

placed on the west side of the building approximately eight feet from a drywell which was identified during the site inspection (Figure 9). This location may have also received wastes from former production activities. All soil boring and groundwater monitoring well locations were reviewed with representatives from the Bureau of Hazardous Site Control prior to the onset of drilling activities.

4.3.1 Monitoring Well Installation

Two groundwater monitoring wells were installed at the Associated Drapery site on Monday, September 27, 1993, following the general guidelines outlined in the May 9, 1988, NYSDEC Division of Hazardous Waste Remediation (DHWR), Technical/Administrative Guidance Memorandum: Phase II Investigation Generic Work Plan.

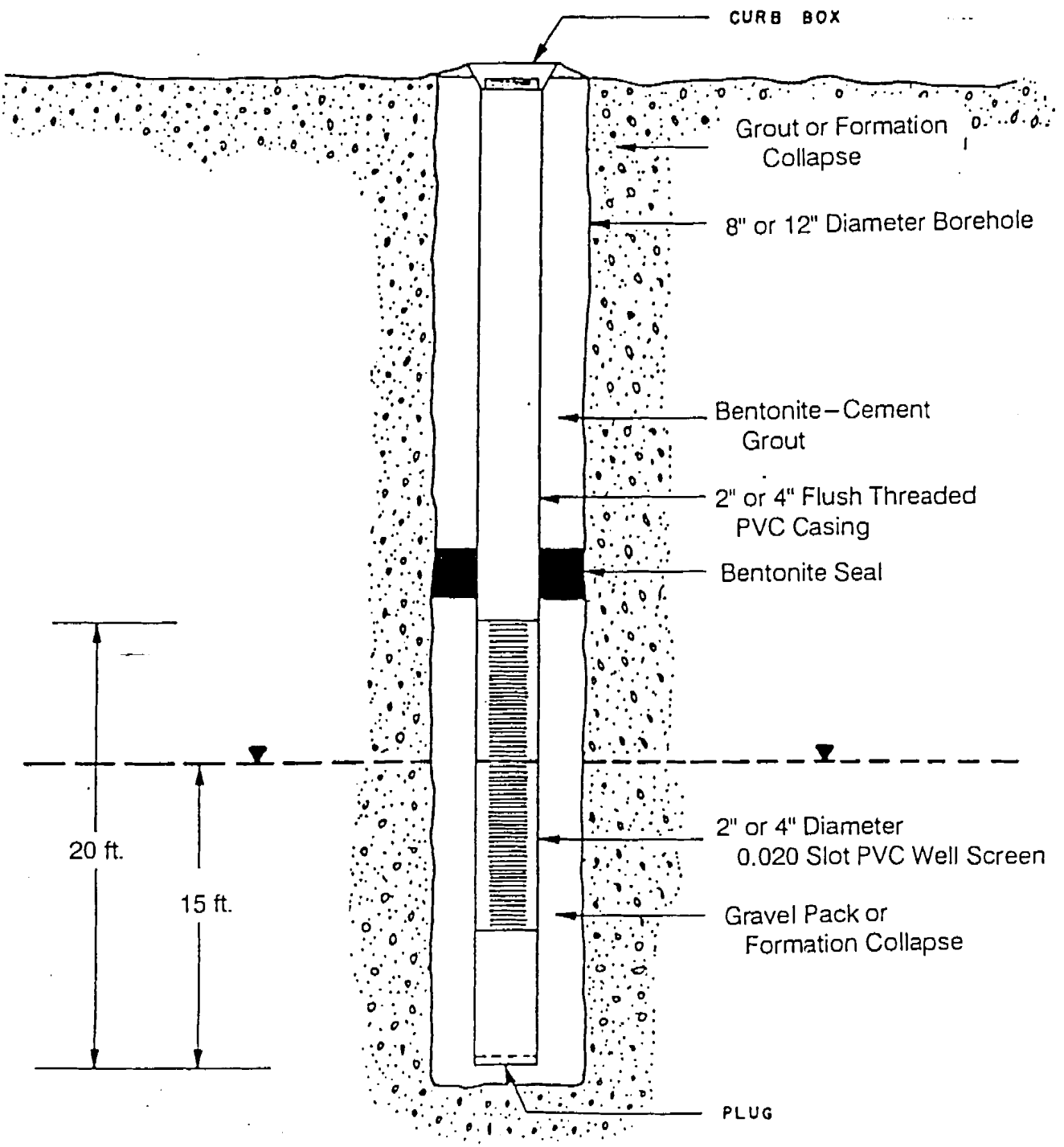
The first well MW-1H, was installed between the Associated Drapery building and Glen Cove Creek (Figure 9), using a CME-75 hollow stem auger rig. Split spoon core barrel samples were collected continuously while drilling to a total depth of 27 feet. All soil samples were collected and logged by a Nassau County Department of Public Works Hydrogeologist.

Following drilling, 20 feet of four-inch diameter, 0.020 slot PVC well screen and 6 feet of schedule 40 PVC casing was installed through the augers and gravel packed with a No. 2 morie sand to within 3.5 feet of grade. The remaining annular space was sealed with a 2 foot bentonite collar and neat cement around a locking curb box. A

DEPARTMENT OF PUBLIC WORKS
DIVISION OF SANITATION & WATER SUPPLY
NASSAU COUNTY, NEW YORK

UPPER GLACIAL MONITORING WELL CONSTRUCTION DETAIL

Figure 12



generalized construction detail for this well is provided in Figure 12.

Groundwater monitoring well MW-2H was drilled and installed in similar fashion. However, it was sampled at 5 foot intervals, since the depth to water had been established in drilling MW-1H. MW-2H was completed using the same methods and materials used during the installation of the first monitoring well.

Soil boring B-1H was drilled on Tuesday, September 28, 1993. Split spoon core barrel samples were collected continuously to a depth of 13 feet below grade. All samples were logged by an NCDPW Hazardous Waste Unit hydrogeologist. Construction details for all groundwater monitoring wells and borings can be found in Table 4.

4.3.2 **Soil Sampling**

The soil samples collected while drilling each groundwater monitoring well/boring were screened in the field for the presence of volatile organic compounds with an HNU photoionization detector (11.7 eV probe), and a Foxboro model 128 Organic Vapor Flame Ionization Detector Analyzer (FID). Soils were also screened for any physical evidence of contamination, including color, odor and staining. HNU readings for soils from MW-1H, 2H and boring B-1H were found to be slightly elevated relative to background levels (<1.0 Calibration Gas Units (CGU) throughout the screening process.

Results of the OVA screening varied considerably in each borehole. The highest organic vapor responses were measured

TABLE 4

ASSOCIATED DRAPERY

BORING/GROUNDWATER MONITORING WELL CONSTRUCTION DETAILS

BORING WELL#	DATE OF INSTALLATION	METHOD OF INSTALLATION	MEASURING PT. ELEVATION	SCREEN SETTING (EL.)	TOTAL DEPTH
B-1H	9/28/93	AUGER	NONE	NONE	13 ft
MW-1H	9/27/93	AUGER	58.04	51.04 TO 31.04	27 ft
MW-2H	9/27/93	AUGER	58.34	52.34 TO 32.34	26 ft

in soil samples collected from well MW-1H and boring B-1H.

Both locations are on the east side of the building adjacent to Glen Cove Creek. Responses at both locations ranged from less than 1 part per million (ppm) to over 1,000 ppm. The lack of correspondingly high HNu readings indicate that the high OVA response may be caused by the presence of decaying natural organic material, rather than synthetic volatile organic compounds. Review of the geologic logs for each boring/well indicates that the highest OVA readings occurred in a black, grey silty organic rich clay, which contained numerous wood fragments.

The only deviation from this pattern occurred in the 1-3 foot sampling interval at both locations. While drilling MW-1H, a grey, medium to coarse sand and gravel with hydrocarbon odor and possible staining was collected. When the sample from this interval was screened both OVA and HNu responses were elevated relative to background. The 1-3 foot sample collected from Boring B-1H, exhibited a similar response, even though there were no olfactory indicators of contamination.

The soil samples collected on the west side of the building from well MW-2M were screened using the same equipment and methods. The OVA responses were typically less than 10 ppm and the HNu responses were less than 0.3 CGU's. The silty organic clay unit was not encountered at this location. The 10-12 foot soil sample exhibited a black discoloration and the highest OVA response (5.2 ppm). This

sample did not exhibit any odors.

Following a review of the geologic logs and the screening results, the 1-3 foot soil samples from MW-1H and B-1H and the 10-12 foot soil sample from MW-2H were selected for laboratory analysis. All soil samples were analyzed for Volatile Organics (VOA), Semivolatile Organic Compounds (BNA), Pesticides, PCB's and Metals.

Each sample was collected in an appropriate laboratory container, labeled and placed in a cooler following approved chain of custody procedures. The sample was then delivered to NYTEST Environmental Inc. of Port Washington, N.Y., for analysis.

4.3.3 **Groundwater Sampling**

The two groundwater monitoring wells which were installed during the Associated Drapery Preliminary Site Assessment were sampled by NCDPW Hazardous Waste Services Unit Hydrogeologists on Wednesday, October 13, 1993. All groundwater samples were analyzed for volatile organics (VOA), semivolatile organic compounds (BNA), pesticides, PCB's and metals as per New York State Analytical Services Protocol (NYSASP) (12/91) by NYTEST Environmental Inc. of Port Washington, N.Y.

All groundwater samples were collected using the general guidelines provided in the May 9, 1988 NYSDEC (DHWR) Technical/Administrative Guidance memorandum: Phase II Investigation Generic Work Plan.

Each groundwater monitoring well was purged a minimum

of three casing volumes with a steam cleaned submersible pump prior to sampling with a stainless steel bailer. Physical parameters including pH, specific conductance, turbidity and temperature were also monitored until stabilization prior to sampling. The final physical parameters measured for each well during the sampling round are presented in Table 5.

Following collection in appropriately labeled laboratory containers, each sample was placed in a cooler with chain of custody record for transport to NYTEST Environmental Inc. of Port Washington, N.Y., for analysis.

5.0 INDIVIDUAL SITE ASSESSMENTS

5.1 Photocircuits Corporation

5.1.1 Soil Quality

Soil quality at the Photocircuits site was determined by reviewing soil sampling data which was collected by H2M consultants in 1986 and supplied by the attorneys along with the 1992 Source Area Investigation. Soil sampling data from nine borings was reviewed and is provided in Table 6. Up to thirteen borings may have been drilled on the Photocircuits site in the summer of 1986. However, sampling data was provided for only those borings presented in the table. The approximate locations for most of the 1986 borings are provided in Figure 10.

Soil samples were presumably collected using a conventional split spoon core barrel at five foot intervals. The only sample collected from an interval other than five

TABLE 5

ASSOCIATED DRAPERY

GROUND WATER SAMPLING SUMMARY

DATE	WELL#	VOLUME PURGED (gallons)	TEMP (C)	PH	SPEC. COND. (milli–mho/cm)	TURBIDTY (NTU'S)
10/13/93	MW–1H	40	17.9	6.90	.366	83
10/13/93	MW–2H	40	19.0	6.75	.574	> 100

TABLE 6

PHOTOCIRCUITS CORPORATION

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SEDIMENTS ORGANIC RESULTS (mg/kg) SOIL BORING/SAMPLE #

SAMPLE DATE 8/12/86

	B1 10'	B2 5'	B4 5'	B5 15'	B6 15'	B9 3 1/2'	B11 5'	B11 15'	B12 5'	B13 20'	B13 5'	POINT NO.1	POINT NO.2	POINT NO.4	RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
CHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
VINYL CHLORIDE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.12
CHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.9
METHYLENE CHLORIDE	U	U	U	U	U	U	0.3	8.8	27.0	17.0	22.0	44.0	51.0	27.0	0.1
ACETONE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.11
CARBON DISULFIDE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	2.7
1,1-DICHLOROETHENE	U	U	U	U	U	U	0.06	U	23.0	0.73	2.6	U	U	U	0.4
1,1-DICHLOROETHANE	U	0.04	U	U	U	U	0.2	0.065	2.9	1.4	0.68	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.3
CHLOROFORM	U	U	U	U	U	U	U	U	0.1	U	U	U	U	U	0.3
1,2-DICHLOROETHANE	U	U	U	U	U	U	U	U	1.2	0.05	0.04	0.04	U	U	0.1
2-BUTANONE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	U	U	1.8	0.1	120.0	9.8	1.8	U	U	U	0.76
CARBON TETRACHLORIDE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.6
VINYL ACETATE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMODICHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
1,2-DICHLOROPROPANE	U	U	U	U	U	U	U	U	U	0.09	U	U	U	U	NA
CIS-1,3-DICLOROPROPENE	U	0.17	U	U	U	U	1.4	0.29	0.27	U	0.24	U	U	U	NA
TRICHLOROETHENE	U	U	0.09	U	U	U	96.0	0.09	0.7	U	0.06	U	U	U	0.7
DIBROMOCLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
1,1,2-TRICHLOROETHANE	U	U	U	U	U	U	U	U	1.1	U	U	U	U	U	NA
BENZENE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	.06
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOFORM	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
4-METHYL-2-PENTANONE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.0
2-HEXANONE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
TETRACHLOROETHENE	U	0.47	0.15	U	U	U	51.0	U	1.8	0.2	8.9	U	U	0.8	1.4
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	0.6
TOLUENE	U	3.3	U	U	U	U	1.1	U	5.8	0.12	0.18	U	U	U	1.5
CHLOROBENZENE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.7
ETHYLBENZENE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	5.5
STYRENE	U	U	U	U	U	U	U	U	U	U	U	U	U	U	NA
XYLENE (TOTAL)	U	U	U	U	U	U	U	U	U	U	U	U	U	U	1.2
TOTAL VOC (CONC.)		4.0	0.24				154	7.4	182	29	34	44.04	51	27.8	

LEGEND

U = UNDETECTED
NA = NOT AVAILABLE

feet was at boring B-9 where the sample was collected at 3.5 feet. Volatile organic compounds detected in soils from the Photocircuits site include: Methylene Chloride, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1,1,1-Trichloroethane, cis-1,3 - Dichloropropene, Trichloroethene, Tetrachloroethene and Toluene.

The highest concentrations of volatile organic compounds from the 1986 soils data were detected in the three borings completed in between the main building and the maintenance/ utility building adjoining Butler Building No. 2. Boring B-12 had the highest concentration of volatile organics with a total of 182 ppm in the five foot sample. Boring B-11 had a combined VOC total of 154 ppm in soils collected at five feet. However, the total volatile organic concentration (TVOC) dropped to 7.4 ppm in the fifteen foot interval. Boring B-13 had a TVOC of 34 ppm in the five foot sample and a TVOC of 29 ppm in the twenty-foot sample.

Methylene Chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,1,1-Trichloroethane, cis-1,3-Dichloropropene, Trichloroethene, Tetrachloroethene and Toluene were detected in all three borings. The highest concentrations of Trichloroethene, Tetrachloroethene and cis-1,3-Dichloropropene occurred in Boring B-11 (5 ft) at 98 ppm, 51 ppm and 1.4 ppm, respectively. The highest concentrations of the remaining five compounds were all detected in boring B-12 (5 ft).

High concentrations of Methylene Chloride were detected in soils collected from soil gas points No. 1, 2 and 4.

Point No. 1 had a concentration of 44 ppm, Point No. 2 had a concentration of 51 ppm and Point No. 4 had a concentration of 27 ppm.

Fewer volatile organic compounds were detected at lower concentrations in borings B-2 and B-4 at the five foot interval. Boring B-4 had a total volatile organic concentration of 0.24 ppm, while boring B-2 had a total of 4.0 ppm. The compound with the highest concentration in soils from boring B-2 was Toluene at 3.3 ppm. The compound detected at the highest concentration in boring B-4 was Tetrachloroethene at 0.015 ppm.

In order to evaluate the potential impacts of the compounds identified in soils from the Photocircuits site, the concentrations of each compound detected were compared to Recommended Soil Cleanup Objectives. These objectives are specified in the November 16, 1992, NYSDEC (DHWR) Technical and Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup levels. Since the depth to water at the Photocircuits site is less than ten feet, the soil cleanup objectives to protect groundwater quality specified in the TAGM were used for comparison. The recommended cleanup objectives for volatile organic compounds can be found in Table 6.

Review of the data in Table 6 indicates that recommended cleanup objectives for individual volatile organic compounds in soil have been exceeded for Methylene Chloride in Borings B-11, 12, 13 and points No. 1, 2 and 4. Cleanup objectives

were also exceeded for 1,1-Dichloroethene, 1,1-Dichloroethane, 1,1,1 Trichloroethane and Tetrachlorethene in borings B-12 and B-13. Boring B-11 exceeded cleanup objectives for 1,1,1-Trichloroethane, Trichloroethene and Tetrachlorethene. The cleanup objective for Toluene was exceeded in soils from boring B-2. The soil cleanup objective of 10 ppm for total volatile organic compounds was also exceeded in Borings B-11, 12 and 13.

5.1.2 **Groundwater Quality**

The ten groundwater monitoring wells identified on Photocircuits Corporation property were sampled by H2M consultants in December 1991, as part of the Source Area Investigation for the Sea Cliff Avenue Industrial Area. The results of this sampling event are provided in Table 7.

Review of the data provided in the table indicates that volatile organic compounds were identified in groundwater beneath the site at each well location. The highest concentration of total volatile organic compounds were detected in water collected from well MW-7, where 7,382 ppb were measured. The lowest concentration of total volatile organics occurred in well MW-4 (7 ppb). The five compounds detected with the greatest frequency were: 1,2-Dichloroethene, Trichloroethene, 1,1-Dichloroethane, 1,1,1-Trichloroethane, and 1,1-Dichloroethene.

Groundwater quality was established for the site by comparing the individual concentrations for the compounds detected with appropriate maximum contaminant levels (MCL's)

TABLE 7

PHOTOCIRCUITS CORPORATION

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

	MONITORING WELL#											
COMPOUND DETECTED (UG/L)	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
CHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	5	
BROMOMETHANE	U	U	U	U	U	U	U	U	U	U	5	
VINYL CHLORIDE	U	U	U	U	U	230	49	U	U	U	2	
CHLOROETHANE	U	U	U	U	10	1000	U	U	U	U	5	
METHYLENE CHLORIDE	U	U	U	U	U	100	U	U	U	U	5	
ACETONE	U	U	U	U	U	26	U	U	U	74	50	
CARBON DISULFIDE	U	U	U	U	U	U	15	U	U	U	50	
1,1-DICHLOROETHENE	140	U	U	20	5	190	U	6	U	9	5	
1,1-DICHLOROETHANE	260	U	U	4	31	3400	14	19	6	16	5	
1,2-DICHLOROETHENE (TOTAL)	60	21	4(J)	65	9	36	75	79	32	86	5	
CHLOROFORM	U	U	U	U	U	3(J)	U	U	U	U	7	
1,2-DICHLOROETHANE	U	U	U	U	U	47	U	U	U	U	5	
2-BUTANONE	U	U	U	U	U	170	U	U	U	62	50	
1,1,1-TRICHLOROETHANE	340	U	U	32	18	2100	3(J)	12	U	16	5	
CARBON TETRACHLORIDE	U	U	U	U	U	U	U	U	U	U	5	
VINYL ACETATE	U	U	U	U	U	U	U	U	U	U		
BROMODICHLOROMETHANE	U	U	U	U	U	U	U	U	U	U		50
1,2-DICHLOROPROPANE	U	U	U	U	U	U	U	U	U	U	5	
CIS-1,3-DICLOROPROPENE	U	U	U	U	U	U	U	U	U	U	5	
TRICHLOROETHENE	43	29	3(J)	59	U	11	4(J)	59	30	79	5	
DIBROMOCLOROMETHANE	U	U	U	U	U	U	U	U	U	U	50	
1,1,2-TRICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	5	
BENZENE	U	U	U	U	U	5(J)	U	U	U	U	0.7	
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	U	U	U	U	U	5	
BROMOFORM	U	U	U	U	U	U	U	U	U	U	50	
4-METHYL-2-PENTANONE	U	U	U	U	U	U	U	U	U	14	50	
2-HEXANONE	U	U	U	U	U	U	U	U	U	U	50	
TETRACHLOROETHENE	U	U	U	66	U	35	U	8	U	8	5	
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	U	U	U	U	U	5	
TOLUENE	U	U	U	U	U	29	U	U	U	U	5	
CHLOROBENZENE	U	U	U	U	U	U	U	U	U	U	5	
ETHYLBENZENE	U	U	U	U	U	U	U	U	U	U	5	
STYRENE	U	U	U	U	U	U	U	U	U	U	5	
XYLENE (TOTAL)	U	U	U	U	U	U	U	U	U	U	5	
TOTAL VOC (CONC.)	843	50	7	246	73	7382	160	183	68	364		

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION

for drinking water in New York State (10NYCRR, Sub-part 5.1), Class GA Groundwater Standards (NYCRR703.5) and Guidance Values (TOGS 1.1.1). Review of the Groundwater Standards in Table 6 indicates that standards for one or more compounds were exceeded at all well locations except MW-4 (Figure 10).

The groundwater monitoring well with the greatest number of individual compounds found to be above their appropriate maximum contaminant levels (MCL's) was MW-7, where a total of thirteen compounds exceeded standards. Chloroethane, 1,1-Dichloroethane and 1,1,1-Trichloroethane were found at the highest concentrations in this well with values of 1,000, 3,400 and 2,100 ppb, respectively. Two of the three compounds with the highest concentrations in monitoring well MW-7 were also found at relatively high concentrations in groundwater monitoring well MW-2, where 1,1-Dichloroethane and 1,1,1-Trichloroethane were identified at 260 and 340 ppb, respectively. All five volatile organic compounds detected in Well MW-2 exceeded their appropriate MCL's. The MCL of 5 ppb established for 1,2- Dichloroethene was exceeded at all well locations, except MW-4, which had an estimated concentration of 4 ppb.

5.2 Pass & Seymour

5.2.1 Soil Quality

Soil quality at the Pass and Seymour site was determined by reviewing sampling data from the 1992 Source Area Investigation prepared by H2M Consultants. Soil samples were collected from eleven locations on the property. Eight of

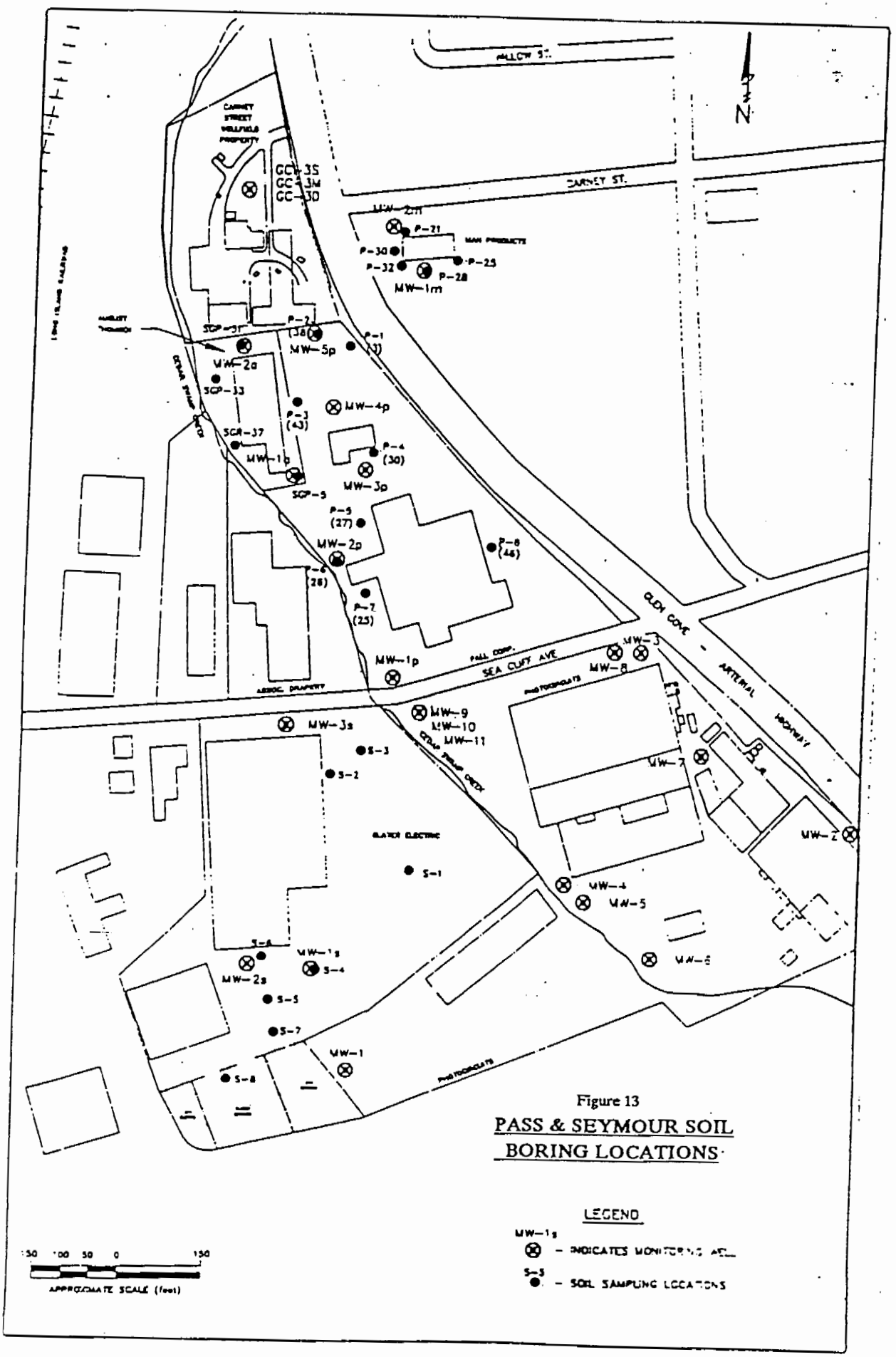


Figure 13

PASS & SEYMOUR SOIL BORING LOCATIONS

Source: H2M Group

the locations were individual soil boring ("S" designations), while three were borings for groundwater monitoring wells MW-1,2 and 3. The locations of all wells and borings are shown in Figure 13.

The results of the December, 1991 sampling event for the 1992 Source Area Investigation are presented in Table 8. Review of this data indicates that volatile organic compounds were present in soils on the Pass and Seymour site. Low levels of halogenated volatile organic compounds were detected in samples collected from borings S-1, S-5, S-8 and MW-3S. Total VOC's in borings S-5, S-8 and MW-3S were less than 0.05 ppm and less than 0.10 ppm in boring S-1.

High levels of halogenated volatile organics were detected in soils collected from boring S-4. The total VOC concentration was approximately 2.35 ppm, the majority of this total consisted of 2.3 ppm of Tetrachloroethene. It should be noted that this concentration was flagged with an "E" by H2M Laboratories. The "E" indicates a positive detection which was above the calibration standard and is therefore estimated.

A total of four compounds were identified in soils at the Pass and Seymour facility. Tetrachloroethene was the most frequently detected compound; it was identified in four borings (S-4,5,8,3S) at concentrations ranging from .014 ppm to 2.3 ppm. Trichloroethene was detected at a concentration of.030 ppm in the boring completed for well MW-3S (6-8 foot interval). Acetone was detected in soil samples collected

TABLE 8

PASS AND SEYMOUR

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SAMPLE DATE 12/91

COMPOUND DETECTED (MG/KG)	SOIL BORING/SAMPLE #											
	*S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	MW-1S (6-8)	MW-2	MW-3 (6-8)	RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
CHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOMETHANE	U	U	U	U	U	U	U	U	U	U	U	NA
VINYL CHLORIDE	U	U	U	U	U	U	U	U	U	U	U	0.12
CHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	0.19
METHYLENE CHLORIDE	.007	U	U	U	U	U	U	U	U	U	U	0.1
ACETONE	.068	U	U	.052(J)	U	U	U	U	U	U	U	0.11
CARBON DISULFIDE	U	U	U	U	U	U	U	U	U	U	U	2.7
1,1-DICHLOROETHENE	U	U	U	U	U	U	U	U	U	U	U	0.4
1,1-DICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	U	U	U	U	U	U	U	U	U	U	U	0.3
CHLOROFORM	U	U	U	U	U	U	U	U	U	U	U	0.3
1,2-DICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	0.1
2-BUTANONE	U	U	U	U	U	U	U	U	U	U	U	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	0.76
CARBON TETRACHLORIDE	U	U	U	U	U	U	U	U	U	U	U	0.6
VINYL ACETATE	U	U	U	U	U	U	U	U	U	U	U	NA
BROMODICHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	NA
1,2-DICHLOROPROPANE	U	U	U	U	U	U	U	U	U	U	U	NA
CIS-1,3-DICLOROPROPENE	U	U	U	U	U	U	U	U	U	U	U	NA
TRICHLOROETHENE	U	U	U	U	U	U	U	U	U	U	.030	0.7
DIBROMOCLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	NA
1,1,2-TRICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	NA
BENZENE	U	U	U	U	U	U	U	U	U	U	U	.06
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOFORM	U	U	U	U	U	U	U	U	U	U	U	NA
4-METHYL-2-PENTANONE	U	U	U	U	U	U	U	U	U	U	U	1.0
2-HEXANONE	U	U	U	U	U	U	U	U	U	U	U	NA
TETRACHLOROETHENE	U	U	U	2.300(E)	.019	U	U	.014	U	U	.019	1.4
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	0.6
TOLUENE	U	U	U	U	U	U	U	U	U	U	U	1.5
CHLOROBENZENE	U	U	U	U	U	U	U	U	U	U	U	1.7
ETHYLBENZENE	U	U	U	U	U	U	U	U	U	U	U	5.5
STYRENE	U	U	U	U	U	U	U	U	U	U	U	NA
XYLENE (TOTAL)	U	U	U	U	U	U	U	U	U	U	U	1.2
TOTAL VOLATILE ORGANIC COMPOUNDS	.075	U	U	2.352	.019	U	U	.014	U	U	.049	

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION
* = TIC's PRESENT
E = CONCENTRATION ABOVE CALIBRATION STANDARD (ESTIMATED)

from borings S-4 and S-1 at concentrations of .052 and .068 ppm, respectively, and Methylene Chloride was also identified in boring S-1 at a concentration of .007 ppm. However, Methylene Chloride and Acetone are common laboratory artifacts and their detection at low levels may not be indicative of actual soil contamination. Methylene Chloride was identified at a concentration of .003 ppm in the field blank.

The concentrations of the four volatile organic compounds identified in soils at the Pass and Seymour site were compared to the recommended soil cleanup objectives specified by the NYSDEC (DHWR) in its November 16, 1992 Technical Administrative Guidance Memorandum (TAGM), Determination of Soil Cleanup Objectives and Cleanup Levels. Three of the four compounds, Acetone, Trichloroethene and Methylene Chloride were an order of magnitude below their respective standards. The only compound which exceeded its cleanup objective (1.4 ppm) was Tetrachloroethene, which was found at an estimated concentration of 2.3 ppm.

5.2.2 Groundwater Quality

Groundwater samples were collected from three well locations on the Pass and Seymour property (Figure 8), in December 1991 as part of H2M's 1992 Source Area Investigation. The results of this sampling round are provided in Table 9. Review of the sampling results found in Table 9 indicate that groundwater beneath the Pass and Seymour site has been impacted by non-halogenated and

TABLE 9

PASS AND SEYMOUR

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

COMPOUND DETECTED (UG/L)	MONITORING WELL#			MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
	MW-1S	MW-2S	MW-3S		
CHLOROMETHANE	U	U	U	5	
BROMOMETHANE	U	U	U	5	
VINYL CHLORIDE	U	U	U	2	
CHLOROETHANE	U	U	U	5	
METHYLENE CHLORIDE	U	U	U	5	
ACETONE	U	U	U	50	
CARBON DISULFIDE	U	U	U	50	
1,1-DICHLOROETHENE	U	U	U	5	
1,1-DICHLOROETHANE	U	U	U	5	
1,2-DICHLOROETHENE (TOTAL)	3(J)	U	21	5	
CHLOROFORM	U	U	U	7	
1,2-DICHLOROETHANE	U	U	U	5	
2-BUTANONE	U	U	U	50	
1,1,1-TRICHLOROETHANE	U	U	U	5	
CARBON TETRACHLORIDE	U	U	U	5	
VINYL ACETATE	U	U	U		
BROMODICHLOROMETHANE	U	U	U		50
1,2-DICHLOROPROPANE	U	U	U	5	
CIS-1,3-DICLOROPROPENE	U	U	U	5	
TRICHLOROETHENE	3(J)	U	100	5	
DIBROMOCLOROMETHANE	U	U	U	50	
1,1,2-TRICHLOROETHANE	U	U	U	5	
BENZENE	U	U	U	0.7	
TRANS-1,3-DICHLOROPROPENE	U	U	U	5	
BROMOFORM	U	U	U	50	
4-METHYL-2-PENTANONE	U	U	U	50	
2-HEXANONE	U	U	U	50	
TETRACHLOROETHENE	150	U	13	5	
1,1,2,2-TETRACHLOROETHANE	U	U	U	5	
TOLUENE	U	U	U	5	
CHLOROBENZENE	U	U	U	5	
ETHYLBENZENE	U	U	U	5	
STYRENE	U	U	U	5	
XYLENE (TOTAL)	U	U	U	5	
TOTAL VOC (CONC.)	156	U	134		

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION

halogenated volatile organic compounds, at two of the three well locations.

A total volatile organic concentration of 156 ppb was measured in the groundwater from monitoring well MW-1S. Groundwater monitoring well MW-3S had a total VOC concentration of 134 ppb. The compound detected at the highest concentration was Tetrachlorethene which measured 150 ppb in monitoring well MW-1S. 1,2-Dichloroethene was also detected in wells MW-1S and 3S at concentrations of 3 and 21 ppb, respectively. Trichloroethene was identified at a concentration of 3 ppb in well MW-1S and 100 ppb in monitoring well MW-3S.

Comparison of the concentrations of each compound detected in groundwater from the Pass and Seymour facility with appropriate MCL's, Class GA standards and applicable Guidance Values indicate that standards were contravened for all compounds identified in groundwater collected from MW-3S and for one of the compounds identified in Well MW-1S.

The MCL of 5 ppb established for Tetrachloroethene was exceeded in MW-1S (150 ppb) and MW-3S (13 ppb). The MCL of 5 ppb established for 1,2-Dichloroethene (total) was also exceeded in groundwater collected from well MW-3S. The maximum contaminant level of 100 ppb established for total combined principal and unspecified organic contaminants (10NYCRR, sub-part 5.1) was also exceeded at both well locations.

5.3 Pall Corporation

5.3.1 Soil Quality

Soil conditions at the Pall Corporation site were examined through a review of the sampling data from the same 1992 Source Area Investigation used in the previous two individual site assessments. A total of twelve soil samples were collected as part of the Source Area Investigation at the Pall Corporation facility. The results of the soil analyses are summarized in Table 10. The location of all sample collection points can be found in Figure 13.

Review of the data in Table 10 in conjunction with the locations shown in Figure 13 indicates that four of the soil samples were collected from the borings for groundwater monitoring wells MW-2P, 3P, 4P and 5P. The remaining eight soil boring locations (P1-P8) appear to have been selected based upon the results of some screening method, possibly soil gas; as each of these locations carries a second numerical designation, which does not seem to equate with a specified two-foot sampling interval.

Review of the data in Table 10 indicates that volatile organic compounds are present in soils beneath the Pall Corporation facility. Eight VOC's were identified including Acetone, 1,1-Dichloroethane, 1,2-Dichloroethene (total), Trichloroethene, Tetrachlorethene, Toluene, Ethylbenzene, and Xylene (total). Tentatively identified volatile organic compounds were also detected at P2, P4, P6 and P7. The two boring locations with the highest concentration of total

TABLE 10

PALL CORPORATION

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SAMPLING DATE:11/91

COMPOUND DETECTED (MG/KG)	SOIL BORING/ SAMPLE #												RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
	MW-2P	(2-4) MW-3P	(1-3) MW-4P	(4-6) MW-5P	P1(3)	P2(38)*	P3(43)	P4(30)*	P5(27)	P6(26)*	P7(25)*	P8(46)	
CHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
VINYL CHLORIDE	U	U	U	U	U	U	U	U	U	U	U	U	0.12
CHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	0.19
METHYLENE CHLORIDE	U	U	U	U	U	U	U	U	U	U	U	U	0.1
ACETONE	.030	.071	.029	U	U	.074	.022	.035(J)	U	.040(J)	U	.047	0.11
CARBON DISULFIDE	U	U	U	U	U	U	U	U	U	U	U	U	2.7
1,1-DICHLOROETHENE	U	U	U	U	U	U	U	U	U	U	U	U	0.4
1,1-DICHLOROETHANE	U	.013	.004(J)	U	U	U	U	U	U	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	U	U	.040	.075	U	U	U	U	U	.240	U	U	0.3
CHLOROFORM	U	U	U	U	U	U	U	U	U	U	U	U	0.3
1,2-DICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	0.1
2-BUTANONE	U	U	U	U	U	U	U	U	U	U	U	U	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	0.76
CARBON TETRACHLORIDE	U	U	U	U	U	U	U	U	U	U	U	U	0.6
VINYL ACETATE	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMODICHLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
1,2-DICHLOROPROPANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
CIS-1,3-DICLOROPROPENE	U	U	U	U	U	U	U	U	U	U	U	U	NA
TRICHLOROETHENE	U	U	U	U	U	U	U	U	.017	.040	U	U	0.7
DIBROMOCLOROMETHANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
1,1,2-TRICHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	NA
BENZENE	U	U	U	U	U	U	U	U	U	U	U	U	.06
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	U	U	U	U	U	U	U	NA
BROMOFORM	U	U	U	U	U	U	U	U	U	U	U	U	NA
4-METHYL-2-PENTANONE	U	U	U	U	U	U	U	U	U	U	U	U	1.0
2-HEXANONE	U	U	U	U	U	U	U	U	U	U	U	U	NA
TETRACHLOROETHENE	U	U	U	.030	U	U	U	.057	.110	1.0	U	U	1.4
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	U	U	U	U	U	U	U	0.6
TOLUENE	U	.018	.024	.210	U	U	U	.110	U	U	U	U	1.5
CHLOROBENZENE	U	U	U	.740	U	U	U	U	U	U	U	U	1.7
ETHYLBENZENE	U	.016	U	.600	U	U	U	.029*	U	U	U	U	5.5
STYRENE	U	U	U	U	U	U	U	U	U	U	U	U	NA
XYLENE (TOTAL)	U	.170	U	4.400	U	U	U	U	U	U	U	U	1.2
TOTAL VOLATILE ORGANIC COMPOUNDS	.030	.288	.097	6.055	U	.074	.022	.231	.127	1.320	U	.047	

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION
* = TIC's PRESENT

volatile organic compounds in soil were MW-5P (4-6 ft) and P6 (26), which totaled 6.055 ppm and 1.320 ppm, respectively. The two compounds with the highest individual concentrations were also detected in these borings. Xylene (total) was found at 4.40 ppm in boring MW-5P and Tetrachloroethene was found at a concentration of 1.0 ppm, in boring P6.

The concentrations of all compounds detected in the soils at the Pall Corporation site were compared with the recommended soil cleanup objectives specified in the November 16, 1992, NYSDEC (DHWR) Technical and Administrative Guidance Memorandum (TAGM), Determination of Soil Cleanup Objectives and Cleanup Levels. Of the eight volatile organic compounds detected, only Xylene (total) exceeded its cleanup objective of 12 ppm in the 4-6 ft sample collected from the boring for monitoring well MW-5P. Only one of the borings exhibited total volatile organic concentrations above the specified cleanup objective of 10 ppm established in the TAGM. Boring P4 had a combined total of 16.291 ppm total volatile organics. This total was comprised mostly of tentatively identified compounds (TIC's), which included unknown hydrocarbons at an estimated concentration of 15.980 ppm.

5.3.2 Groundwater Quality

Five groundwater monitoring wells were sampled by H2M consultants on Pall Corporation property in November, 1991. The location of all wells are shown in Figures 7 and 13. A sixth groundwater monitoring well MW-6P (Figure 7) was identified by NCDPW hydrogeologists during the summer of

1993. Groundwater quality data was not provided for this well and it may not have existed during the November, 1991 sampling event.

The results of the November, 1991 sampling round are provided in Table 11. Review of this data indicates that volatile organic compounds exist in groundwater beneath the Pall site at all five well locations. The two wells with the highest total volatile organic compound (TVOC) concentrations in groundwater are MW-2P and MW-5P which had concentrations of 3,259 and 6,847 ppb, respectively. The remaining three wells had TVOC concentrations greater than 50 ppb. MW-3P had a total concentration of 736 ppb, MW-4P had a concentration of 302 ppb and groundwater monitoring well MW-1P totaled 58 ppb.

Four of the volatile organic compounds detected were common to all five wells. Vinyl Chloride ranged from 7 to 840 ppb, 1,1,-Dichloroethane was detected at concentrations ranging from 8 to 33 ppb, 1,2-Dichloroethene (total) was found from 25 to 3500 ppb and Trichloroethene ranged from 12 to 1600 ppb. Tetrachloroethene was detected at all well locations except MW-1P and was found in groundwater at concentrations ranging from 18 to 880 ppb. The remaining eight compounds which were detected on the site occurred sporadically at concentrations less than 25 ppb.

Four of the five sampled well locations had total volatile organic compound concentrations exceeding the 100 ppb level established for combined principal and unspecified

TABLE 11

PALL CORPORATION

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

SAMPLE DATE: 11/91

COMPOUND DETECTED (UG/L)	MONITORING WELL#						
	MW-1P	MW-2P	MW-3P	MW-4P	MW-5P	MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
CHLOROMETHANE	U	U	U	U	U	5	
BROMOMETHANE	U	U	U	U	U	5	
VINYL CHLORIDE	7(J)	130	120	110	840	2	
CHLOROETHANE	U	U	U	U	2(J)	5	
METHYLENE CHLORIDE	U	U	3(J)	U	U	5	
ACETONE	U	U	U	U	U	50	
CARBON DISULFIDE	U	U	U	U	U	50	
1,1-DICHLOROETHENE	2(J)	22	6	U	7	5	
1,1-DICHLOROETHANE	11	33	13	8	10	5	
1,2-DICHLOROETHENE (TOTAL)	25	2500	480	140	3500	5	
CHLOROFORM	U	U	U	U	U	7	
1,2-DICHLOROETHANE	U	U	U	U	U	5	
2-BUTANONE	U	U	U	U	U	50	
1,1,1-TRICHLOROETHANE	1(J)	4(J)	U	U	U	5	
CARBON TETRACHLORIDE	U	U	U	U	U	5	
VINYL ACETATE	U	U	U	U	U		
BROMODICHLOROMETHANE	U	U	U	U	U		50
1,2-DICHLOROPROPANE	U	U	U	U	U	5	
CIS-1,3-DICLOROPROPENE	U	U	U	U	U	5	
TRICHLOROETHENE	12	480	65	19	1600	5	
DIBROMOCLOROMETHANE	U	U	U	U	U	50	
1,1,2-TRICHLOROETHANE	U	U	4(J)	U	U	5	
BENZENE	U	2(J)	U	1(J)	U	0.7	
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	5	
BROMOFORM	U	U	U	U	U	50	
4-METHYL-2-PENTANONE	U	U	U	U	U	50	
2-HEXANONE	U	U	U	U	U	50	
TETRACHLOROETHENE	U	85	24	18	880	5	
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	5	
TOLUENE	U	U	5	2(J)	3(J)	5	
CHLOROBENZENE	U	U	U	U	U	5	
ETHYLBENZENE	U	U	U	U	U	5	
STYRENE	U	U	U	U	U	5	
XYLENE (TOTAL)	U	3(J)	22	4(J)	5(J)	5	
TOTAL VOC (CONC.)	58	3259	736	302	6847		

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION

organic contaminants in drinking water (NYCRR, sub-part 5.1). The only well which did not exceed this value was MW-1P which had a TVOC concentration of 58 ppb. Maximum contaminant levels and/or class GA standards specified for individual compounds were exceeded at one or more well locations for the following compounds: Vinyl Chloride, 1,1-Dichloroethene, 1-1 Dichloroethane, 1,2- Dichloroethene (total) Trichloroethene, Tetrachloroethene and Xylene.

5.4 August Thomsen

5.4.1 Soil Quality

Soil conditions at the August Thomsen site were evaluated using soil sampling results obtained from four soil borings drilled in November 1991, during H2M's Source Area Investigation for Sea Cliff Avenue. The locations for the borings appear to have been selected based upon some form of soil gas screening and have been designated SGP (Soil Gas Point). No information was provided regarding the depth of these samples. However, since they were presumably selected based upon soil gas readings it would be reasonable to infer that they were collected from the vadose zone. The locations of all borings are provided in Figure 13.

The results of the volatile organic analyses for the soil samples collected at the August Thomsen site can be found in Table 12. Review of the data presented in the table indicates that very low levels of volatile organics are present in the soils beneath August Thomsen property at three of the four boring locations. Volatile organic compounds

TABLE 12

AUGUST THOMSEN

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SAMPLING DATE: 11/91

COMPOUND DETECTED (MG/KG)	SOIL BORING/SAMPLE #				
	SGP-5	SGP-31*	SGP-33	SGP-37	RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
CHLOROMETHANE	U	U	U	U	NA
BROMOMETHANE	U	U	U	U	NA
VINYL CHLORIDE	U	U	U	U	0.12
CHLOROETHANE	U	U	U	U	1.9
METHYLENE CHLORIDE	U	U	U	U	0.1
ACETONE	U	U	U	U	0.11
CARBON DISULFIDE	U	U	U	U	2.7
1,1-DICHLOROETHENE	U	U	U	U	0.4
1,1-DICHLOROETHANE	U	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	U	U	U	U	0.3
CHLOROFORM	U	U	U	U	0.3
1,2-DICHLOROETHANE	U	U	U	U	0.1
2-BUTANONE	U	U	U	U	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	0.76
CARBON TETRACHLORIDE	U	U	U	U	0.6
VINYL ACETATE	U	U	U	U	NA
BROMODICHLOROMETHANE	U	U	U	U	NA
1,2-DICHLOROPROPANE	U	U	U	U	NA
CIS-1,3-DICLOROPROPENE	U	U	U	U	NA
TRICHLOROETHENE	U	U	U	U	0.7
DIBROMOCLOROMETHANE	U	U	U	U	NA
1,1,2-TRICHLOROETHANE	U	U	U	U	NA
BENZENE	U	U	U	U	.06
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	NA
BROMOFORM	U	U	U	U	NA
4-METHYL-2-PENTANONE	U	U	U	U	1.0
2-HEXANONE	U	U	U	U	NA
TETRACHLOROETHENE	U	U	.008	U	1.4
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	0.6
TOLUENE	U	U	U	U	1.5
CHLOROBENZENE	U	U	U	U	1.7
ETHYLBENZENE	U	U	U	U	5.5
STYRENE	U	U	U	U	NA
XYLENE (TOTAL)	U	U	U	U	1.2
TOTAL VOLATILE ORGANIC COMPOUNDS	U	U	.008	U	

LEGEND

U = UNDETECTED
* = TIC's PRESENT

were not detected in soil samples collected at borings SGP-5 and SGP-37. A single volatile organic compound, Tetrachloroethene was detected at a concentration of .008 ppm in soils collected from boring SGP-33.

The soil sample which was collected from the fourth boring SGP-31, did not reveal the presence of any calibrated volatile organic compounds. However, twelve tentatively identified volatile organic compounds (TIC's) were detected at an estimated concentration of 2.414 ppm. These TIC's included seven hydrocarbons, three cyclic compounds and two unknowns.

Comparison of the concentrations of volatile organic compounds detected in soils at the August Thomsen facility with their NYSDEC appropriate individual and total recommended cleanup objectives (TAGM, 1992) indicate that neither form of the objective was exceeded at any boring location.

5.4.2 Groundwater Quality

Groundwater quality beneath the August Thomsen site was examined using volatile organic data collected from two onsite monitoring wells which were sampled by H2M Consultants in November 1991. The two wells are located on August Thomsen property on the southeast and northwest corners of the building (Figure 7).

The volatile organic data collected from these two wells is presented in Table 13. Review of this information indicates that groundwater beneath the site has been impacted

TABLE 13

AUGUST THOMSEN

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

SAMPLING DATE: 11/91

COMPOUND DETECTED (UG/L)	MONITORING WELL#		MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
	MW-1A	MW-2A		
CHLOROMETHANE	U	U	5	
BROMOMETHANE	U	U	5	
VINYL CHLORIDE	130	180	2	
CHLOROETHANE	U	U	5	
METHYLENE CHLORIDE	2	2	5	
ACETONE	U	U	50	
CARBON DISULFIDE	U	U	50	
1,1-DICHLOROETHENE	9	3(J)	5	
1,1-DICHLOROETHANE	15	6	5	
1,2-DICHLOROETHENE (TOTAL)	480	620	5	
CHLOROFORM	U	28	7	
1,2-DICHLOROETHANE	U	U	5	
2-BUTANONE	U	U	50	
1,1,1-TRICHLOROETHANE	16	3	5	
CARBON TETRACHLORIDE	U	U	5	
VINYL ACETATE	U	U		
BROMODICHLOROMETHANE	U	U		50
1,2-DICHLOROPROPANE	U	U	5	
CIS-1,3-DICLOROPROPENE	U	U	5	
TRICHLOROETHENE	380	65	5	
DIBROMOCLOROMETHANE	U	U	50	
1,1,2-TRICHLOROETHANE	U	U	5	
BENZENE	2	8	0.7	
TRANS-1,3-DICHLOROPROPENE	U	U	5	
BROMOFORM	U	U	50	
4-METHYL-2-PENTANONE	U	U	50	
2-HEXANONE	U	U	50	
TETRACHLOROETHENE	410	160	5	
1,1,2,2-TETRACHLOROETHANE	U	U	5	
TOLUENE	U	12	5	
CHLOROBENZENE	U	12	5	
ETHYLBENZENE	U	13	5	
STYRENE	U	10	5	
XYLENE (TOTAL)	U	39	5	
TOTAL VOC (CONC.)	1444	1011		

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION

by volatile organic compounds. The total concentration of VOC's in groundwater from monitoring well MW-2A is 1011 ppb and 1444 ppb in well MW-1A. The majority of the volatile organic compounds found in these wells can be classified as solvents along with their associated breakdown products.

Nine of the fifteen volatile organic compounds detected in groundwater are common to both wells. These compounds include: Vinyl Chloride, Methylene Chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethene (total), 1,1,1-Trichloroethane, Trichloroethene, Benzene, and Tetrachloroethene. The compounds with the highest individual concentrations are Vinyl Chloride, 180 ppb (MW-2A), 1,2-Dichloroethene (total), 620 ppb (MW-2A), Trichloroethene, 380 ppb (MW-1A) and Tetrachloroethene 410 ppb (MW-1A). All concentrations were found to be well above their respective Maximum Contaminant Levels.

5.5 Associated Drapery

5.5.1 Soil Quality

In order to evaluate potential impacts to soil and groundwater at the Associated Drapery site, the concentrations of each compound detected in soil were compared to Recommended Soil Cleanup Objectives. These objectives are specified in the November 16, 1992, NYSDEC (DHWR) Technical and Administrative Guidance Memorandum, (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels.

Semivolatile organic compounds which are present in fuel

oil were also compared with TCLP alternative guidance values established in the NYSDEC Spill Technology and Remediation Series, Memo #1, Petroleum - Contaminated Soil Guidance Policy, August 1992. If the concentration of the compound detected is below the appropriate recommended soil cleanup objective or its corresponding TCLP Alternative Guidance Value, it would not require remediation. However, any proposed use of these soils would be subject to NYSDEC review and approval. The results of the soil quality analysis for each group of organic and inorganic compounds is provided below:

Volatile Organic Compounds:

A limited number of volatile organic compounds were identified in soil samples collected from boring B-1H and the borings for groundwater monitoring wells MW-1H and MW-2H. Methylene Chloride was detected at all three locations with a maximum concentration of .030 ppm in boring B-1H. Methylene Chloride was also identified in the laboratory blanks for all three samples. Acetone was not detected in boring MW-1H; however, it was identified at a concentration of .056 ppm in boring MW-2H and at .073 ppm in soils collected from B-1H. Acetone was also found in the laboratory blank for the B-1H sample. Both Methylene Chloride and Acetone are common laboratory artifacts and their detection at low concentrations in the blanks may not be indicative of actual contamination. The only other volatile organic compound identified in soils from the Associated Drapery site was

2-Butanone, which was detected at a concentration of .009 ppm in boring MW-2H.

A total of ten tentatively identified volatile organic compounds (TIC's) were detected at an estimated total concentration of 2.08 ppm in soils collected from boring MW-1H. The detected compounds are commonly derived from the breakdown of petroleum products. These results are consistent with observations made in the field, as shallow core samples from MW-1H did have a noticeable petroleum odor.

The total concentration of volatile organic compounds detected in onsite soils (approximately 2 ppm) was below the soil cleanup objective of 10 ppm established for total volatile organic contamination.

Pesticide/PCB:

Pesticide concentrations in soil were found to be below detectable limits for all analyses in samples collected from borings MW-1H and MW-2H. Six pesticides were detected in soils collected from boring B-1H; Dieldrin, 4,4,-DDE, Endrin, 4,4-DDT, alpha-chlordane and gamma-chlordane. The total concentration of these pesticides was .058 ppm.

PCB concentrations were below detectable limits in soils analyzed from boring B-1H and MW-2H. Arochlor-1254 was identified at a concentration of 0.130 ppm in boring MW-1H. All pesticides detected in boring B-1H were at concentrations below their respective soil cleanup objectives. The PCB concentration of 0.130 ppm detected in soils from boring MW-

1H was below both the allowable surface (1.0 ppm) and subsurface (10 ppm) recommended soil cleanup objectives.

Semivolatile Organic Compounds:

Semivolatile organic compounds were identified in soil samples collected from each of the on-site boring/monitoring well locations. The results of the semi-volatile analysis are provided in Table 14.

Review of the soil quality data presented in the table indicates that numerous semi-volatile organic compounds are present in soil samples collected from the Associated Drapery site. The majority of the individual compounds detected were found at concentrations less than one part per million. The single exception was 2-Methylnapthalene which was detected at a concentration of 1.2 ppm in shallow soils collected from boring MW-1H. Many of the semi-volatile organic results in Table 14 were also flagged with a "J" by NYTEST Laboratories, indicating that they represent positive detections at estimated concentrations below the calibrated standard.

Comparison of the semi-volatile organic compound concentrations in onsite soils with the NYSDEC's recommended soil cleanup objectives and TCLP Alternative Guidance Values indicate that two compounds in soils collected from boring B-1H exceed individual cleanup objectives. The Chrysene concentration of 0.5 ppb in soil from boring B-1H exceeds its cleanup objective of 0.4 ppm and the phenol concentration of 0.0685 ppm in this boring exceeds its individual soil cleanup objective of 0.03 ppm. All other semi-volatile

TABLE 14

ASSOCIATED DRAPERY

SEMIVOLATILE ORGANIC ANALYSIS SUMMARY – SOIL

COMPOUND	monitoring wells		boring	Recommended Soil	TCLP Alternative
concentration MG/KG	MW-1H	MW-2H	B-1H	Cleanup Objective (ppm)	Guidance Value (ppm)
Phenol	u	u	0.0685	0.03	
bis(2-Chloroethyl)Ether	u	u	u	NA	
2-Chlorophenol	u	u	u	0.08	
1,3-Dichlorobenzene	u	u	u	NA	
1,4-Dichlorobenzene	u	u	u	NA	
1,2-Dichlorobenzene	u	u	u	NA	
2-Methylphenol	u	u	u	0.1	
2,2'-oxbis(1-Chloropropane)	u	u	u	NA	
4-Methylphenol	u	u	u	0.9	
N-Nitroso-di-n-propylamine	u	u	u	NA	
Hexachloroethane	u	u	u	NA	
Nitrobenzene	u	u	u	0.2	
Isophorone	u	u	u	NA	
2-Nitrophenol	u	u	u	0.33	
2,4-Dimethylphenol	u	u	0.0765	NA	
bis(2-Chloroethoxy)methane	u	u	u	NA	
2,4-Dichlorophenol	u	u	u	0.4	
1,2,4-Trichlorobenzene	u	u	u	NA	
Naphthalene	u	u	u	13	0.2
4-Chloroanline	u	u	u	0.22	
Hexachlorobutadiene	u	u	u	NA	
4-Chloro-3-methylphenol	u	u	u	0.24	
2-Methylnaphthalene	1.2	u	u	36.4	
Hexachlorocyclopentadiene	u	u	u	NA	
2,4,6-Trichlorophenol	u	u	u	NA	
2,4,5-Trichlorophenol	u	u	u	0.1	
2-Chloronaphthalene	u	u	u	NA	
2-Nitroaniline	u	u	u	0.43	
Dimethylphthalate	u	u	u	2.0	
Acenaphthylene	u	u	u	41	
2,6-Dinitrotoluene	u	u	u	1.0	
3-Nitroaniline	u	u	u	0.05	
Acenaphthene	u	0.12J	0.043J	90	0.4
2,4-Dinitrophenol	u	u	u	0.2	
4-Nitrophenol	u	u	u	0.1	
Dibenzofuran	u	0.080J	u	6.2	
2,4-Dinitrotoluene	u	u	u	NA	
Diethylphthalate	u	u	u	7.1	
4-Chlorophenyl-phenylether	u	u	u	NA	
Fluorene	u	0.110J	0.040J	350	1.0
4-Nitroanaline	u	u	u	NA	
4,6-Dinitro-2-Methylphenol	u	u	u	NA	
N-Nitrosodiphenylamine (1)	u	u	u	NA	
4-Bromophenyl-phenylether	u	u	u	NA	
Hexachlorobenzene	u	u	u	1.4	
Pentachlorophenol	u	u	u	1.0	
Phenanthrene	0.300J	0.520J	0.53	220	1.0
Anthracene	u	0.130J	0.130J	700	1.0
Carbazole	u	u	u	NA	
Di-n-Butylphthalate	u	u	0.045J	8.1	
Fluoranthene	0.100J	0.530J	0.830	1900	1.0
Pyrene	0.064J	0.5105J	0.830	665	1.0
Butylbenzylphthalate	0.073J	u	u	122	
3,3'-Dichlorobenzidine	u	u	u	NA	
Benzo(a)anthracene	0.0865J	0.250J	0.47	3.0	*
Chrysene	0.160J	0.270J	0.5	0.4	*
bis(2-Ethylhexl)phthalate	0.150J	0.170J	0.930B	435	
Di-n-octylphthalate	u	u	u	120	
Benzo(b)fluoranthene	0.230J	0.180J	0.290J	1.1	*
Benzo(k)fluoranthene	0.099J	0.190J	0.300J	1.1	*
Benzo(a)pyrene	u	u	0.360J	11	*
Indeno(1,2,3-cd)pyrene	u	u	0.210J	3.2	*
Dibenz(a,h)anthracene	u	u	u	165,000	1.0
Benzo(g,h,i)perylene	u	u	0.210J	800	*

* – alternative value does not exist, TCLP must be used
J – estimated concentration
B – detected in blank
u – undetected

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organic compounds detected in soils from this boring were below individual soil cleanup objectives.

Comparison of the concentrations of detected semi-volatile organic compounds in shallow soils collected from borings MW-1H and MW-2H with applicable cleanup objectives indicates that all compounds were below individual soil cleanup objectives in each boring. The total semivolatile organic compound concentration in soils from each boring was compared to the total semivolatile cleanup objective of 500 ppm established for contaminated soil in the NYSDEC's November 16, 1992 TAGM. The total semi-volatile organic compound concentrations in borings MW-1H, 2H and B-1H were 2.46 ppm, 3.06 ppm and 5.86 ppm, respectively. All concentrations were an order of magnitude lower than the total semi-volatile cleanup objective.

Metals:

As specified in the November 16, 1992 TAGM, the Eastern USA soil background levels were used for comparative soil quality review of the metals results from the Associated Drapery site. The complete results of the inorganic analysis for metals are provided in Table 14A. Review of the metals concentrations found in the table indicates that two metals exceeded the specified range of background levels. Lead was present in the 1 - 3 foot sample collected from boring B-1H at a concentration of 108 ppm. The magnesium concentration in soils collected from the 1 - 3 foot interval in the boring

TABLE 14A

ASSOCIATED DRAPERY

INORGANIC ANALYSIS DATA SUMMARY – SOILS

WELL#	B–1H	MW–1H	MW–2H	Eastern USA Background Values
DEPTH	1' – 3'	1' – 3'	10' – 12'	
SAMPLE DATE	9/28/93	9/27/93	9/27/93	(ppm)
METALS				
ALUMINUM	7,300.00	4,130.00	5,450.00	33,000
ANTIMONY	BDL	BDL	BDL	NA
ARSENIC	6.20	4.40	4.30	3 – 12
BARIUM	41.60 (b)	24.90 (b)	116.00	15 – 600
BERYLLIUM	0.37 (b)	BDL	0.47 (b)	0 – 1.75
CADMIUM	BDL	BDL	BDL	0.1 – 1.0
CALCIUM	892.00 (b)	10,700.00	8,220.00	130 – 35,000
CHROMIUM	15.80	7.50	19.60	1.5 – 40
COBALT	4.70 (b)	BDL	7.60 (b)	2.5 – 60
COPPER	13.30	17.90	8.20	1 – 50
CYANIDE	BDL	BDL	BDL	NA
IRON	10,100.00	7,430.00	19,800.00	2,000 – 550,000
LEAD	108.00	20.70	5.00	4 – 61
MAGNESIUM	1,440.00	6,690.00	5,730.00	100 – 5,000
MANGANESE	143.00	142.00	116.00	50 – 5,000
MERCURY	BDL	BDL	BDL	.001 – 0.2
NICKEL	11.60	8.50	13.30	.5 – 25
POTASSIUM	627.00 (b)	684.00 (b)	1,770.00	8,500 – 43,000
SELENIUM	BDL	BDL	BDL	0.1 – 3.9
SILVER	BDL	BDL	BDL	NA
SODIUM	118.00 (b)	87.00 (b)	144.00 (b)	6,000 – 8,000
THALLIUM	BDL	BDL	BDL	NA
VANADIUM	17.50	11.40	23.60	1 – 300
ZINC	43.50	20.70	19.80	9 – 50

BDL – Below Detection Limit

(b) – Detected in Blank

NOTE: ALL RESULTS MG/KG

:NYTEST LAB

B:\assmetal.WKS

completed for monitoring well MW-1H was 6,690 ppm. The magnesium concentration in the 10 - 12 foot sampling interval in the boring completed for monitoring well MW-2H was also elevated and found to be 5,730 ppm.

The lead which was present in sediments collected from the 1 - 3 foot sampling interval from boring B-1H may be the result of runoff from the adjacent roadway and parking lot. Boring B-1H was completed within the apron of an inclined driveway leading to a loading dock with a catch basin at its base. The sediments from this interval were characterized by grey, black, silty, fine to medium grained quartz sand with some assorted gravel. There was no odor of any kind associated with this sample.

The slightly elevated levels of magnesium detected in samples collected from boring MW-1H and MW-2H are not uncommon in soil collected from the upper glacial aquifer on Long Island and they are most likely the result of the weathering of parent glacial materials. All other metals detected in soil samples collected from the three borings were within the ranges established for Eastern U.S. soils.

5.5.2 Groundwater Quality

The groundwater sampling results obtained from the Associated Drapery site can be evaluated by examining each group of analytes and the individual concentrations of those compounds found to be above detectable limits. Each of the compounds detected in groundwater beneath the site can then be compared to existing groundwater and drinking water

standards and with appropriate guidance values or published values for specific organic and inorganic compounds common to native groundwater. This comparison can be used to identify those compounds which are indicative of possible site impacts and to evaluate the overall quality of local groundwater.

The results of this evaluation for each of the major groups of organic and inorganic compounds are as follows:

Volatile Organic Compounds:

Comparison of groundwater monitoring results from wells MW-1H and MW-2H with appropriate maximum contaminant levels (MCL's) for drinking water in New York State (10 NYCRR, sub part 5.1) class GA groundwater standards (NYCRR 703.5) and guidance values (TOGS 1.1.1.) found in Table 14B, indicates that volatile organic compounds are present at low concentrations in each well. Groundwater samples collected from monitoring well MW-1H, had a total VOC concentration of 52 ppb. Acetone was detected at 44 ppb, Methylene Chloride at 6 ppb and 1,2-Dichloroethene (total) at 2 ppb in this well.

The maximum contaminant level of 5 ppb established for Methylene Chloride was exceeded in groundwater collected from MW-1H. Maximum contaminant levels and class GA standards were not contravened by any of the other volatile organic compounds detected in this well. The total volatile organic compound concentration (52 ppb) did not exceed the total of 100 ppb established for combined principal and unspecified organic contaminants in drinking water (NYCRR, sub-part 5.1).

TABLE 14B

ASSOCIATED DRAPERY

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

SAMPLING DATE: 10/14/93

COMPOUND DETECTED (UG/L)	MONITORING WELL#		MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
	MW-1H	MW-2H		
CHLOROMETHANE	U	U	5	
BROMOMETHANE	U	U	5	
VINYL CHLORIDE	U	U	2	
CHLOROETHANE	1	U	5	
METHYLENE CHLORIDE	6BJ	4	5	
ACETONE	44	17	50	
CARBON DISULFIDE	U	U	50	
1,1-DICHLOROETHENE	U	U	5	
1,1-DICHLOROETHANE	U	1	5	
1,2-DICHLOROETHENE (TOTAL)	J	U	5	
CHLOROFORM	U	U	7	
1,2-DICHLOROETHANE	U	14	5	
2-BUTANONE	U	U	50	
1,1,1-TRICHLOROETHANE	U	U	5	
CARBON TETRACHLORIDE	U	U	5	
VINYL ACETATE	U	U		
BROMODICHLOROMETHANE	U	U		50
1,2-DICHLOROPROPANE	U	U	5	
CIS-1,3-DICLOROPROPENE	U	U	5	
TRICHLOROETHENE	U	4J	5	
DIBROMOCLOROMETHANE	U	U	50	
1,1,2-TRICHLOROETHANE	U	U	5	
BENZENE	U	U	0.7	
TRANS-1,3-DICHLOROPROPENE	U	U	5	
BROMOFORM	U	U	50	
4-METHYL-2-PENTANONE	U	U	50	
2-HEXANONE	U	U	50	
TETRACHLOROETHENE	U	U	5	
1,1,2,2-TETRACHLOROETHANE	U	U	5	
TOLUENE	U	U	5	
CHLOROBENZENE	U	U	5	
ETHYLBENZENE	U	U	5	
STYRENE	U	U	5	
XYLENE (TOTAL)	U	U	5	
TOTAL VOC (CONC.)	52	40		

LEGEND

U = UNDETECTED
NA = NOT AVAILABLE
B = FOUND IN BLANK
J = ESTIMATED CONCENTRATION

The total volatile organic compound concentration detected in groundwater collected from well MW-2H was 39 ppb. Individual volatile organic compounds detected in this well included: Methylene Chloride (4 ppb), Acetone (17 ppb), 1,2-Dichloroethane (14 ppb) and Trichloroethene (4 ppb). 1,2-Dichloroethane was the only compound to exceed its individual MCL. The TVOC concentration for groundwater collected from this well was below all applicable standards.

Semivolatile Organic Compounds:

The majority of the semivolatile organic compounds analyzed in groundwater from the Associated Drapery site were below detectable limits and therefore below both class GA groundwater standards and MCL's for wells MW-1H and MW-2H. The single common analyte detected in groundwater collected from both wells, bis (2-Ethylhexl) phthalate was found at concentrations of 1 ppb in MW-1H and 2 ppb in MW-2H. Diethylphthalate was also detected at 3 ppb in well MW-2H. The detected concentrations of all semivolatile compounds are below the MCL of 50 ppb established for any individual unspecified organic contaminant.

A total of seven tentatively identified semivolatile organic compounds (TIC's) were detected at a total estimated concentration of 118 ppb in groundwater collected from MW-1H. Three tentatively identified semivolatile organic compounds were detected in groundwater collected from MW-2H at a total estimated concentration of 16 ppb. The total semivolatile concentration detected in MW-1H exceeded the MCL for total

principal and unspecified organic contaminants by 18 ppb. The total semivolatile organic compound concentration in well MW-2H is below all applicable standards.

Pesticide/PCB's :

The concentrations of pesticides and PCB's were below both the class GA standards and MCL's for drinking water in New York State.

Inorganic Compounds (Metals) :

The groundwater sampling results for metals collected from wells MW-1H and 2H are compared with appropriate maximum contaminant levels (MCL's) for drinking water in New York State (10NYCRR, subpart 5.1), class GA Groundwater Standards (NYCRR 703.5) and guidance values (TOGS 1.1.1.) and can be found in Table 14C.

Review of the information presented in the table indicates that groundwater beneath the Associated Drapery site has been contaminated by inorganic compounds. Groundwater samples collected from monitoring well MW-1H, have elevated concentrations of several secondary contaminants including: Iron (2,930 ppb), Manganese (1140 ppb) and sodium (42,300 ppb). These three inorganic constituents were found to be above these respective maximum contaminant levels.

Groundwater collected from monitoring well MW-2H was found to have elevated concentrations of both primary and secondary inorganic compounds. The primary inorganic

TABLE 14C

INORGANIC ANALYSIS – GROUNDWATER – ASSOCIATED DRAPERY

	monitoring wells		MCL or Class GA
COMPOUND	MW–1H	MW–2H	Standards/GV
Aluminum	1,580.0	58,500.0	NS
Antimony	U	U	3
Arsenic	U	5.1 (b)	25
Barium	41.4 (b)	933.0	1000
Beryllium	U	4.4 (b)	3
Cadmium	U	U	10
Calcium	24,100.0	70,700.0	NS
Chromium	U	122.0	50
Cobalt	U	106.0	NS
Copper	8.7	101.0	200
Iron	2,930.0	123,000.0	300
Lead	U	61.0	25
Magnesiuim	6,950.0	32,100.0	35000
Manganese	1,140.0	7,990.0	300
Mercury	U	0.3	2
Nickel	U	133.0	NS
Potassium	3,540.0	16,100.0	NS
Selenium	U	U	10
Silver	U	U	50
Sodium	42,300.0	22,500.0	20000
Thallium	U	U	4
Vanadium	U	145.0	NS
Zinc	U	734.0	300
Cyanide	U	U	100

Notes:

Laboratory – NYTEST, Inc.

U – Below Detection Limit

(b) – Identified in Method Blank

NS – No Standard

All Results in UG/L

compounds include: Beryllium, Chromium and Lead. Chromium and Lead were detected at concentrations of 122 ppb and 61 ppb, respectively. Both values exceed their individual MCL's. Beryllium was detected at 4.4 ppb; however, it was also detected in the laboratory blank and may not be indicative of actual groundwater contamination.

The secondary inorganic compounds detected at elevated concentrations in well MW-2H include: Iron (12,300 ppb), Manganese (7,990 ppb), Sodium (22,500 ppb) and Zinc (734 ppb). All four inorganic species exceeded their respective MCL's in groundwater.

5.6 Carney Street Wellfield

5.6.1 Soil Quality

Soil conditions at the Carney Street Wellfield property, which includes the Glen Cove Day Center Expansion, were examined using soil sampling results which were obtained from two separate environmental surveys performed at the site. The first set of soil sampling results were collected during a Source Area Investigation for the property, which was prepared by H2M Consultants in October, 1991. The soil samples were collected from six separate borings prior to the expansion of the Day Care Center. Boring locations, sampling intervals and protocols were not provided with the analytical results.

The results of the volatile organic analyses for soils from the first report are provided in Table 15. Review of the

TABLE 15

CARNEY STREET WELLFIELD

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SAMPLING DATE: 6\30\91

COMPOUND DETECTED (MG/KG)	SOIL BORING/SAMPLE #						
	S-1	S-2	S-3	S-4	S-5	S-6	RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
CHLOROMETHANE	U	U	U	U	U	U	NA
BROMOMETHANE	U	U	U	U	U	U	NA
VINYL CHLORIDE	U	U	U	U	U	U	0.12
CHLOROETHANE	U	U	U	U	U	U	0.19
METHYLENE CHLORIDE	U	U	U	U	U	U	0.1
ACETONE	U	U	U	U	U	U	0.11
CARBON DISULFIDE	U	U	U	U	U	U	2.7
1,1-DICHLOROETHENE	U	U	U	U	U	U	0.4
1,1-DICHLOROETHANE	U	U	U	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	U	U	U	.310	U	.230	0.3
CHLOROFORM	U	U	U	U	U	U	0.3
1,2-DICHLOROETHANE	U	U	U	U	U	U	0.1
2-BUTANONE	U	U	U	U	U	U	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	U	U	0.78
CARBON TETRACHLORIDE	U	U	U	U	U	U	0.6
VINYL ACETATE	U	U	U	U	U	U	NA
BROMODICHLOROMETHANE	U	U	U	U	U	U	NA
1,2-DICHLOROPROPANE	U	U	U	U	U	U	NA
CIS-1,3-DICLOROPROPENE	U	U	U	U	U	U	NA
TRICHLOROETHENE	U	U	U	.180	U	.084	0.7
DIBROMOCLOROMETHANE	U	U	U	U	U	U	NA
1,1,2-TRICHLOROETHANE	U	U	U	U	U	U	NA
BENZENE	U	U	U	U	U	U	.06
TRANS-1,3-DICHLOROPROPENE	U	U	U	U	U	U	NA
BROMOFORM	U	U	U	U	U	U	NA
4-METHYL-2-PENTANONE	U	U	U	U	U	U	1.0
2-HEXANONE	U	U	U	U	U	U	NA
TETRACHLOROETHENE	.240	U	U	.810	U	.230	1.4
1,1,2,2-TETRACHLOROETHANE	U	U	U	U	U	U	0.6
TOLUENE	U	U	U	U	U	U	1.5
CHLOROBENZENE	U	U	U	U	U	U	1.7
ETHYLBENZENE	8.3	25	U	U	U	U	5.5
STYRENE	U	U	U	U	U	U	NA
XYLENE (TOTAL)	26	74	U	U	U	U	1.2
TOTAL VOLATILE ORGANIC COMPOUNDS	34.54	99	U	1.30	U	.544	

LEGEND

U = UNDETECTED
NA = NOT AVAILABLE

data presented in the table indicates that volatile organic compounds are present in soil samples collected from beneath the Carney Street Wellfield property. Soil from four of six borings exhibited volatile organic compound concentrations ranging from .544 ppm to 99 ppm. Soils from borings S-4 and S-6 were impacted by halogenated organics, including Tetrachloroethene, Trichloroethene and 1,2-Dichloroethene (total). All three compounds which were detected were common to both borings. The maximum concentrations of Tetrachloroethene, Trichloroethene and 1,2-Dichloroethene (total) were .810 ppm, .180 ppm and .310 ppm, respectively. Soils collected from Borings S-1 and S-2 were impacted by high levels of Aromatic compounds, principally Ethylbenzene and Xylene (total). Ethylbenzene concentrations ranged from 8.3 ppm to 25 ppm, while Xylene concentrations ranged from 26 ppm to 74 ppm. The only halogenated organic compound detected in these borings was Tetrachloroethene which occurred at a concentration of .240 ppm in soils collected from boring S-1.

The concentrations of all volatile organic compounds detected in soils during the October, 1991 Source Area Investigation were compared with the recommended soil cleanup objectives specified in the November 16, 1992 NYSDEC (DHWR) Technical and Administrative Guidance Memorandum (TAGM), Determination of soil cleanup objectives and cleanup levels. The individual cleanup objective of .30 ppm specified for 1,2-Dichloroethene (total) was exceeded by .010 ppm in soils

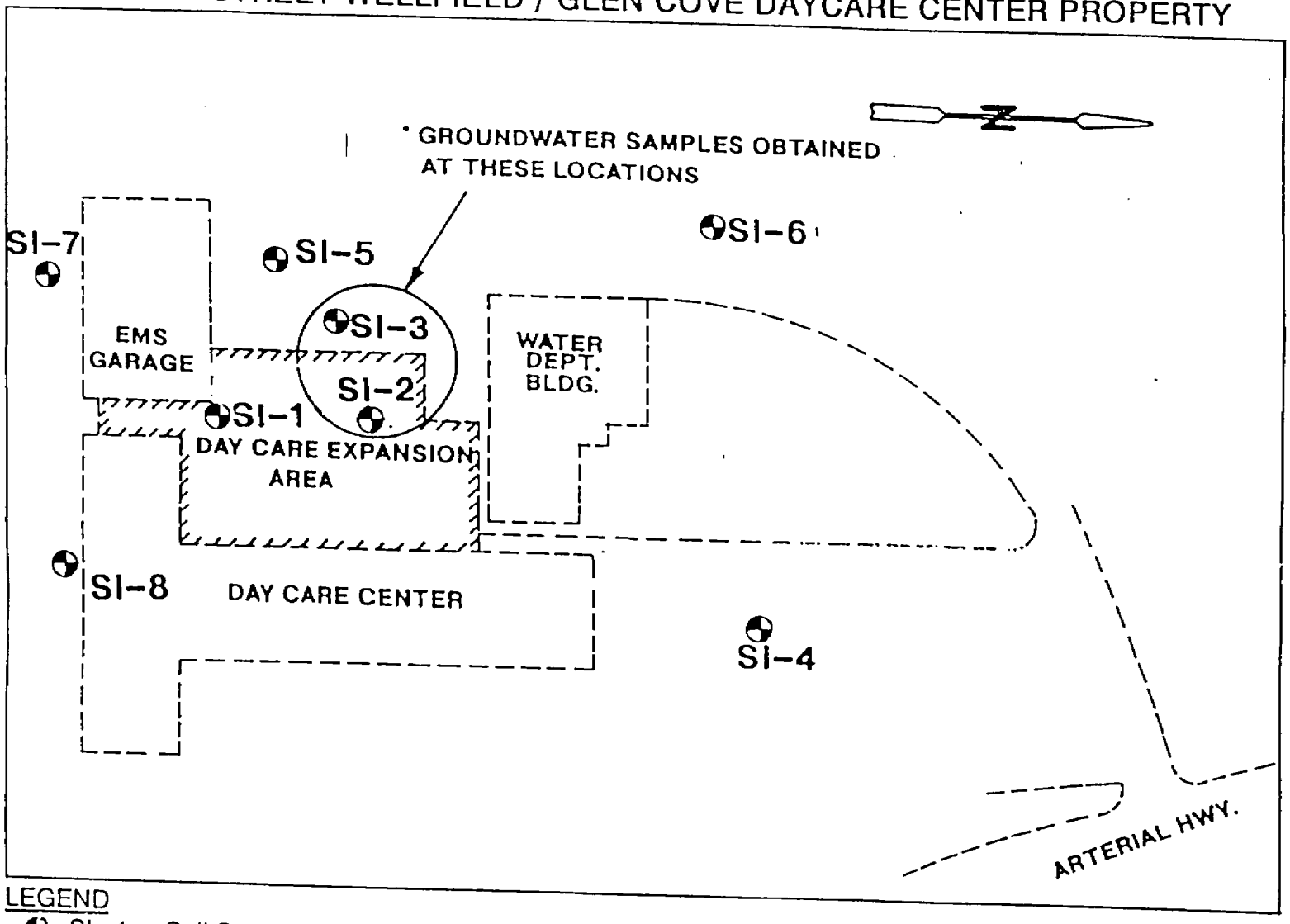
collected from boring S-4. Individual cleanup objectives were exceeded for Ethylbenzene and Xylene in boring S-1 and S-2. The cleanup objective of 10 ppm established for total VOC's in soil was also exceeded at these two boring locations.

The second set of soil sampling results which were analyzed for the Carney Street Wellfield property were collected in June, 1992 by the consulting firm of Fanning, Phillips and Molnar (FP&M). A total of eight soil borings were drilled at the locations shown in Figure 14. Based upon a review of the FP&M report, it is believed that all soil samples were collected in the Vadose Zone from 0-3 feet below land surface. The results of the volatile organic analyses for the samples collected from these borings are presented in Table 16.

It should be noted that numerous compounds in the table are labeled as "NA" or not available. The NA designation was assigned to any compound which was not listed among detections in the FP&M report. Since the laboratory method used in the volatile organic analysis was not provided, there is no way to know which compounds were analyzed for.

Review of the data presented in the table indicates that both halogenated and aromatic volatile organic compounds are present in soil samples collected from Wellfield property. The total volatile organic compound (VOC) concentration in soils collected from these seven onsite borings were less than .125 ppm. Low levels of Vinyl Chloride, Methylene

CARNEY STREET WELLFIELD / GLEN COVE DAYCARE CENTER PROPERTY



LEGEND

SI-1 – Soil Sample Location

SCALE

1" = 50' (approx.)

FIGURE 14

Source: Fanning, Phillips & Molnar

TABLE 16

CARNEY STREET WELLFIELD

VOLATILE ORGANIC ANALYSIS SUMMARY

SOIL

SAMPLING DATE: 6\11\92

COMPOUND DETECTED (MG/KG)	SOIL BORING/SAMPLE #								
	SI-1	SI-2	SI-3	SI-4	SI-5	SI-6	SI-7	SI-8	RECOMMENDED SOIL CLEAN-UP OBJECTIVE (PPM)
CHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
VINYL CHLORIDE	U	U	U	U	U	U	U	.014	0.12
CHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	0.19
METHYLENE CHLORIDE	.003	.002	5.3	.003	.002	.002	.002	.002	0.1
ACETONE	.006	.024	8.8	.024	.010	.041	.005	.008	0.11
CARBON DISULFIDE	NA	NA	NA	NA	NA	NA	NA	NA	2.7
1,1-DICHLOROETHENE	U	U	U	U	U	U	U	U	0.4
1,1-DICHLOROETHANE	U	U	U	U	U	U	U	U	0.2
1,2-DICHLOROETHENE (TOTAL)	.001	.001	U	U	U	U	U	.075	0.3
CHLOROFORM	NA	NA	NA	NA	NA	NA	NA	NA	0.3
1,2-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	0.1
2-BUTANONE	U	.004	U	.004	U	.008	U	.002	0.3
1,1,1-TRICHLOROETHANE	U	U	U	U	U	U	U	U	0.76
CARBON TETRACHLORIDE	NA	NA	NA	NA	NA	NA	NA	NA	0.6
VINYL ACETATE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
CIS-1,3-DICLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TRICHLOROETHENE	.008	.015	U	U	U	U	U	.001	0.7
DIBROMOCLOROMETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZENE	NA	NA	NA	NA	NA	NA	NA	NA	.06
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BROMOFORM	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	NA	NA	NA	NA	1.0
2-HEXANONE	NA	NA	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHENE	.034	.066	U	U	U	U	U	.006	1.4
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA	NA	0.6
TOLUENE	U	U	U	U	U	.001	U	.001	1.5
CHLOROBENZENE	U	U	U	U	U	U	U	U	1.7
ETHYLBENZENE	U	U	5.6	U	U	U	U	U	5.5
STYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA
XYLENE (TOTAL)	U	U	110	U	U	U	U	U	1.2
TOTAL VOLATILE ORGANIC COMPOUNDS	.050	.112	129.5	.031	.012	.053	.007	.109	

LEGEND

U = UNDETECTED
J = ESTIMATED CONCENTRATION
NA = NOT AVAILABLE

Chloride, 2-Propanone, 1,2-Dichloroethene, 2-Butanone, Tetrachloroethene and Trichloroethene were detected in borings SI-1,2 and SI-4 through SI-8. However, the TVOC concentration in boring SI-3 was found to be 129.5 ppm. The majority of this total was Xylene which was detected at a concentration of 110 ppm. Three other volatile organic compounds were detected at high levels. Methylene Chloride, Ethylbenzene and 2-Propanone (Acetone) were detected at concentrations of 5.3 ppm, 8.6 ppm and 110 ppm, respectively.

The concentrations of all volatile organic compounds detected in soils during the Fanning, Phillips and Molnar study were also compared to appropriate recommended NYSDEC soil cleanup objectives. The total volatile organic concentration of 129.5 ppm exceeded the cleanup objective of 10 ppm established in the TAGM.

Individual volatile organic cleanup objectives for soils were contravened for each of the compounds detected in boring SI-3.

5.6.2 Groundwater Quality

Groundwater samples were collected from two shallow, temporary monitoring wells (Figure 14), which were installed during the drilling phase of the June, 1992 investigation. The results of the groundwater analyses are provided in Table 17.

Review of the information presented in the table indicates that groundwater beneath Carney Street Wellfield

TABLE 17

CARNEY STREET WELLFIELD

VOLATILE ORGANIC ANALYSIS SUMMARY

GROUNDWATER

SAMPLING DATE: 6/92

COMPOUND DETECTED (UG/L)	MONITORING WELL#			
	GW-1	GW-2	MCL OR CLASS GA STANDARD	GUIDANCE VALUE (TOG's)
CHLOROMETHANE	NA	NA	5	
BROMOMETHANE	NA	NA	5	
VINYL CHLORIDE	180	21	2	
CHLOROETHANE	1	U	5	
METHYLENE CHLORIDE	1	3	5	
ACETONE	8	1	50	
CARBON DISULFIDE	NA	NA	50	
1,1-DICHLOROETHENE	1	U	5	
1,1-DICHLOROETHANE	5	1	5	
1,2-DICHLOROETHENE (TOTAL)	890	380	5	
CHLOROFORM	NA	NA	7	
1,2-DICHLOROETHANE	NA	NA	5	
2-BUTANONE	4	U	50	
1,1,1-TRICHLOROETHANE	4	U	5	
CARBON TETRACHLORIDE	NA	NA	5	
VINYL ACETATE	NA	NA		
BROMODICHLOROMETHANE	NA	NA		50
1,2-DICHLOROPROPANE	NA	NA	5	
CIS-1,3-DICLOROPROPENE	NA	NA	5	
TRICHLOROETHENE	31	60	5	
DIBROMOCLOROMETHANE	NA	NA	50	
1,1,2-TRICHLOROETHANE	NA	NA	5	
BENZENE	NA	NA	0.7	
TRANS-1,3-DICHLOROPROPENE	NA	NA	5	
BROMOFORM	NA	NA	50	
4-METHYL-2-PENTANONE	NA	NA	50	
2-HEXANONE	NA	NA	50	
TETRACHLOROETHENE	97	130	5	
1,1,2,2-TETRACHLOROETHANE	NA	NA	5	
TOLUENE	25	1	5	
CHLOROBENZENE	5	U	5	
ETHYLBENZENE	500	3	5	
STYRENE	NA	NA	5	
XYLENE (TOTAL)	1400	6	5	
TOTAL VOC (CONC.)	3152	606		

LEGEND

U = UNDETECTED
NA = NOT AVAILABLE

property has been impacted by both halogenated and aromatic compounds. Tetrachloroethene, Trichloroethene, 1,2-Dichloroethene (total) and Vinyl Chloride were detected in groundwater collected at both monitoring well locations. All four compounds were detected above their respective maximum concentration limits or class GA standards. The maximum concentrations in groundwater for Tetrachloroethene, Trichloroethene, 1,2-Dichloroethene (total) and Vinyl Chloride were 130 ppb, 60 ppb, 890 ppb and 180 ppb, respectively.

The three Aromatic compounds detected in groundwater samples collected at the site, Toluene, Ethylbenzene and Xylene (total) exceeded their respective MCL's and class GA standards in well GW-1 (Figure 14). Toluene, Ethylbenzene and Xylene (total) were detected at their maximum concentrations in well GW-1 with values of 25 ppb, 500 ppb and 1400 ppb, respectively. Xylene (total), was detected in groundwater samples collected from well GW-2 at a concentration of 6 ppb, which exceeded its MCL by 1 ppb. Other compounds detected in groundwater which did not exceed groundwater standards include: Chloroethane, Methylene Chloride, Acetone, 1,1-Dichloroethene, 1,1-Dichloroethane, 2-Butanone, 1,1,1-Trichloroethane and Chlorobenzene.

Comparison with applicable groundwater standards indicate that volatile organic concentrations in both wells exceed the maximum contaminant level of 100 ppb specified for total principal and unspecified volatile organics. The MCL's

established for individual compounds are exceeded whenever they are detected in both wells, with the exception of Methylene Chloride (2 ppb), 1,1-Dichloroethene in monitoring well MW-2A (3 ppb) and 1,1,1-Trichloroethane in well MW-2A (3 ppb).

6.0 CONCLUSIONS & RECOMMENDATIONS

PHOTOCIRCUITS CORPORATION

Review of the soil and groundwater quality information collected for the Photocircuits Corporation site, which is presented in Section 5.1, indicates that several of the volatile organic compounds detected in both media exceeded applicable soil and groundwater standards. For soils, the recommended cleanup objective of 10 ppm established for total volatile organic compounds was exceeded at three boring locations. Individual cleanup objectives were exceeded at a number of boring locations for the following compounds: Methylene Chloride, Tetrachlorethene, Trichloroethene, 1,1,1-Trichloroethane, 1,1-Dichloroethene, 1,1-Dichloroethane and Toluene.

Those volatile organic compounds which were identified in soils at the site were then compared to the chemicals listed in two Nassau County Department of Health (NCDH) industrial chemical profiles which were prepared in 1977 and updated in 1988 as part of the joint NCDPW/NCDH, June 1990, Investigation of Contaminated Aquifer Segment Report. Over seventy-eight inspections/surveys were conducted at commercial and industrial sites in the profile area. The

profile area included fifty-four active and twenty-four inactive sites. Each facility was surveyed for chemical usage, storage and waste disposal methods practical between 1977 and 1988. Three of the four volatile organic compounds which were detected at the highest concentrations in soil samples from the Photocircuits site, Methylene Chloride (51 ppm), 1,1,1-Trichloroethane (120 ppm) and Tetrachloroethene (51 ppm) are reported to have been used in production activities.

Groundwater beneath the Photocircuits Corporation facility was also found to be impacted by volatile organic compounds. Individual groundwater standards or maximum contaminant levels for one or more compounds were exceeded at nine of the ten monitoring well locations. All of the volatile organic compounds which were found at concentrations above their respective individual cleanup objectives in soil at the site were identified in groundwater. The three volatile organic chemicals listed in the industrial chemical profile for the facility, Methylene Chloride, 1,1,1-Trichloroethane and Tetrachloroethene were detected in groundwater at maximum concentrations of 100 ppb, 2,100 ppb and 66 ppb, respectively.

Water quality at the Photocircuits site was also evaluated with respect to current hydrogeologic conditions for the study area. However, it should be noted that this evaluation is limited due to the amount of time, approximately two years, which has passed since collection of

the groundwater data. Direct comparison of past groundwater chemistry with current hydrologic conditions can only be done in a general way. Changes in the concentrations of various volatile organic compounds due to biodegradation and natural attenuation within the aquifer, coupled with seasonal or long term variations in local groundwater flow patterns preclude the development of concentration contour or plume maps. However, general conclusions regarding overall flow direction and potential migration of contaminants can be made.

Review of section 3.5 indicates that the local direction of groundwater flow in the shallow or water table portion of the upper glacial aquifer is from southeast to northwest. Shallow groundwater flow is modified by the presence of a local groundwater mound, several topographic highs, and Glen Cove Creek which acts as a discharge area (Figure 6). There does not appear to be an upgradient source of volatile organic compounds southeast of Photocircuits Corporation. Any volatile organic compounds found in groundwater at the site would tend to move in a northwesterly direction toward Sea Cliff Avenue. The occurrence of 1,1,1-Trichloroethane in groundwater beneath the site at concentrations more than an order of magnitude greater than any of the downgradient well locations at Pall Corporation, August Thomsen and the Carney Street Wellfield property coupled with its documented use in the Industrial Chemical Profile (ICP) indicates that it is the major source of this compound.

Based upon the presence of volatile organic chemicals

used in production at the facility and in soil and groundwater at concentrations above applicable soil cleanup objectives and groundwater standards, it is recommended that the Photocircuits Corporation be classified as a Class 2 site, in that it poses a significant threat to the environment and to public health.

PASS AND SEYMOUR

Soil and groundwater conditions at Pass and Seymour (formerly Slater Electric Co.) were examined in section 5.2 of this report. Volatile organic compounds were non-detected or found at low levels (<100 ppb) in soil samples collected from ten of the eleven boring locations. The only location which had soils with volatile organic compound concentrations above individual soil cleanup objectives was boring S-4. The concentration of Tetrachloroethene in samples from this boring exceeded the individual cleanup objective of 1.4 ppm by approximately 0.9 ppm. It should be noted that the Tetrachloroethene concentration (2.3 ppm) was estimated by the laboratory since it was above the calibration standard. However, this estimated concentration does represent a positive detection. Tetrachloroethene was identified at low levels (<50 ppb) in soils from three other borings.

Review of the groundwater data prepared for the Pass and Seymour site in section 5.2 revealed that the maximum contaminant level (MCL) of 100 ppb established for total combined principal and unspecified volatile organics was

exceeded at two of three on-site well locations. The volatile organic compound with the greatest concentration was Tetrachloroethene. Tetrachloroethene was found at a concentration of 150 ppb in monitoring well MW-1S and 13 ppb in MW-3S. Both concentrations exceeded the individual MCL of 5 ppb specified for this compound. The MCL for 1,2-Dichloroethene (total) (5 ppb) was also exceeded in groundwater collected from monitoring well MW-3S.

Groundwater quality at Pass and Seymour was also evaluated with respect to local groundwater flow. Groundwater flows from southwest to northeast beneath the facility, (Figure 6). The shallow flow pattern is influenced by the local topography and the presence of Glen Cove Creek. Land surface elevations south and west of the site rise rapidly to over 100 feet ASL, while elevations along Glen Cove Creek typically range between 55 and 60 feet ASL. The rapid change in elevation over a short linear distance, coupled with moderate levels of precipitation, which are typical on Long Island, generally produce a shallow water table profile which follows the local topography.

The local groundwater flow pattern which currently exists beneath the site suggests that if similar conditions existed during the time of sampling any contaminants present in groundwater would tend to migrate to the northeast, toward Glen Cove Creek and Seacliff Avenue. Similarly, the lack of contaminants in monitoring well MW-2s indicate that at the time of sampling there was no upgradient source of volatile

organics southwest of the site.

The volatile organic compounds detected in soil and groundwater at the Pass and Seymour facility were compared to the Industrial Chemical Profile prepared for the area. Review of information in the profile indicates that approximately 4,500 gallons of Tetrachloroethene were used annually at this facility. This compound was detected at significant concentrations in both soil and groundwater. Based upon the presence of this volatile organic compound (Tetrachloroethene) at concentrations above recommended cleanup objectives in soil and New York State Department of Health drinking water standards in groundwater, it is recommended that the Pass and Seymour site be classified as a Class 2 site in that it posses a significant threat to the environment and public health.

PALL CORPORATION

Environmental quality information for Pall Corporation which was examined in Individual Site Assessment Section 5.3, was used to evaluate soil and groundwater conditions at the site. A total of eight volatile organic compounds (VOC) were identified in soils beneath the Pall Corporation facility. The only VOC which exceeded its specified individual cleanup objective (1.2 ppm) was Benzene. However, comparison of the detected compounds with the Industrial Chemical Profile for the site indicated that two of the compounds had been used historically at Pall. Tetrachloroethene and Trichloroethene were identified at maximum concentration of 1.0 ppm and .040

ppm respectively. Although both compounds were detected at concentrations below their respective individual cleanup objectives, their presence in soil indicates a potential source of contamination.

Groundwater at the Pall Corporation site has been impacted by volatile organic compounds at all five groundwater monitoring well locations. Total volatile organic compound concentrations ranged from 58 ppb in groundwater monitoring well MW-1P to 6,847 ppb in MW-5P.

Groundwater currently flows from southeast to northwest beneath the Pall Corporation facility (Figure 6). Any contaminants present in groundwater at the site would tend to migrate toward the Carney Street Wellfield. Several volatile organic compounds detected in shallow groundwater beneath Pall Corporation have also been identified in groundwater samples collected at Photocircuits corporation. The common compounds include: Vinyl Chloride, Chloroethane, Methylene Chloride, 1,1-Dichloroethene, 1,1-Dichloroethane, 1,2-Dichloroethene (total), 1,1,1-Trichloroethane, Trichloroethene, Tetrachloroethene, Benzene and Toluene.

Current groundwater flow patterns in the Upper Glacial Aquifer indicate that Photocircuits Corporation is hydraulically upgradient of Pall Corporation. Therefore, if current groundwater flow is consistent with the patterns which existed at the time of sampling for the two sites, the presence of the nine common volatile organic compounds in groundwater may be the result of biodegradation of chemicals

used on site or migration of these compounds from the Photocircuits Corporation site.

Tetrachloroethene and Trichloroethene were the only two of the eleven common compounds detected in groundwater at Pall identified in the Industrial Chemical Profile for the site. They were detected in the majority of on-site wells at concentrations above their individual maximum contaminant level of 5 ppb. Trichloroethene was identified in all site wells at concentrations ranging from 12 ppb to 1600 ppb, while Tetrachlorethene was detected in all wells except MW-1P at concentrations ranging from 18 ppb to 880 ppb. Although it was detected in groundwater beneath both sites the occurrence of Trichloroethene at concentrations over twenty times greater than the nearest potential upgradient source, Photocircuts Corporation (79 ppb), indicates that Pall Corporation is a major point of origin for this compound.

The presence of volatile organic compounds identified in the Industrial Chemical Profile (ICP) and at significant concentrations in the soil and at levels exceeding NYS Drinking Water Standards in the groundwater, demonstrate that the Pall Corporation site should be designated a Class 2 site in that it posses a significant threat to the environment and public health.

AUGUST THOMSEN

Groundwater and soil conditions at the August Thomsen facility were examined in section 5.4 of this report. Review of the soil analyses from this section indicate that volatile

organic compounds were either non-detected or present at low parts per billion concentrations in three of the four onsite borings. The single volatile organic compound identified in soils at the site, was Tetrachloroethene at a concentration of 8 ppb in boring SGP-33. However, twelve tentatively identified volatile organic compounds (TIC's) were detected at an estimated concentration of 2.414 ppm in soils from boring SGP-31. Recommended individual and total cleanup objectives were not exceeded for any of the compounds detected in soils at the site. The Industrial Chemical Profile prepared for August Thomsen did not list any bulk volatile organic compounds. Small volumes of inks, paints, thinners and polishing compounds are used in production activities at the site. Low levels of volatile organic compounds in soils at the facility would appear to be consistent with the types of materials listed in the ICP for the site.

However, groundwater quality data for the August Thomsen facility presented in section 5.4.2 is not consistent with the soil quality data and the information presented in the Industrial Chemical Profile. Numerous volatile organic compounds were identified in the two on-site wells at concentrations ranging from 2 ppb to 1444 ppb. The two principal VOC's identified in soil and groundwater at the neighboring Pall Corporation facility, Trichloroethene and Tetrachloroethene were detected in groundwater samples collected from monitoring wells MW-1A and MW-2A at maximum

concentrations of 380 ppb and 410 ppb, respectively. The occurrence of volatile organic compounds used at Pall Corp. in groundwater beneath the August Thomsen site may in part be explained through a review of current water level data. Review of water level information collected for the August Thomsen site indicates that groundwater flow in the shallow portion of the upper glacial aquifer is from southeast to northwest (Figure 6). If current groundwater flow patterns are consistent with those present during the November, 1991 sampling round, then August Thomsen can be considered hydraulically downgradient of Pall Corporation, and susceptible to contamination from the adjoining site. Other volatile organic compounds detected at concentrations well above their maximum contaminant levels include: Vinyl Chloride(180 ppb) and 1,2-Dichloroethene (620 ppb).

Although the Industrial Chemical Profile for the August Thomsen facility does not currently list any of the VOC's detected in groundwater beneath the site, the property was formerly owned by Pall Corporation. Historically, Pall Corporation has used both Tetrachloroethene and Trichloroethene. The detection of Tetrachloroethene in soil samples from the August Thomsen site coupled with its occurrence in groundwater at concentrations above drinking water standards represents a significant threat to the environment and public health. As such, it is recommended that August Thomsen be designated a Class 2 site.

ASSOCIATED DRAPERY

Soil and groundwater quality at the Associated Drapery site were examined in Section 5.5 of this report. Review of the soil analyses presented in that section indicate that a limited number of volatile organic compounds were present in soil samples collected on site at low concentrations. Methylene Chloride was detected in soils from all three boring locations at a maximum concentration of .030 ppm; it was also identified in laboratory blanks.

Acetone was detected in two borings at a maximum concentration of .073 ppm. Acetone was also found in the laboratory blanks. Both Methylene Chloride and Acetone are common laboratory artifacts and their detection at low concentrations in the sample blanks indicates that the low levels identified in the soils may not represent actual soil contamination. 2-Butanone was the only other volatile organic compound identified in soil at a concentration of .009 ppm.

A total of ten tentatively identified volatile organic compounds were detected in soils at an estimated concentration of 2 ppm. This total was well below the soil cleanup objective of 10 ppm established for total volatile organic compounds in soil.

A total of six pesticides were identified in soils at the Associated Drapery site. All six were below their individual soil cleanup objectives. The total concentration of pesticides in onsite soils (.058 ppm) was also below

applicable cleanup objectives.

There was a single detection of Arochlor-1254 at a concentration of .130 ppm in soils collected on site. This concentration was below both individual and total soil cleanup objectives, established for PCB's.

Several semivolatile organic compounds were detected in soils collected at the Associated Drapery site. Two compounds, Phenol and Chrysene slightly exceeded their individual cleanup objectives in borings B-1H. However, the total combined semivolatile organic concentration from each of the on-site borings was an order of magnitude lower than the cleanup objective of 500 ppm established for total semi-volatile organic compounds.

Each group of analytes: volatile organic compounds, semivolatile organic compounds, pesticides, PCB's and metals detected in on-site soils were compared to the Industrial Chemical Profile (ICP) prepared for the Sea Cliff Avenue area by the Nassau County Department of Health. The ICP lists Trichloroethene and Tetrachloroethene as possibly being used at the HMS Machine Shop, the former owner of the Associated Drapery site. Neither of these volatile organic compounds were detected in any of the on-site soil samples, and none of the remaining four groups were listed among the materials used on site.

Review of groundwater quality data presented in Section 5.5 indicates that volatile organic compounds were present in both onsite wells (MW-1H, 2H) at low concentrations. Total

volatile organic compound concentrations in both wells were below the maximum contaminant level (MCL) of 100 ppb established for combined principal and unspecified organic contaminants in drinking water (NYCRR, Sub-part 5-1). Individual maximum contaminant levels were exceeded for Methylene Chloride in monitoring well MW-1H and 1,2-Dichloroethane (14 ppb) in monitoring well MW-2H.

Comparison of those volatile organic compounds detected in groundwater at the Associated Drapery site with those volatile organic compounds listed in the Industrial Chemical Profile for the site, indicate that one compound was present. However, the detected compound, Trichloroethene was present at a concentration of 4 ppb which is below its individual MCL of 5 ppb.

The concentrations of all specified semivolatile organic compounds identified in groundwater at the site were below their respective maximum contaminant levels. However, the concentrations of unspecified semi-volatile organic compounds in groundwater collected from well MW-1H exceeded the MCL for total principal and unspecified organic contaminants by 18 ppb. The concentrations of all pesticides and PCB's detected in groundwater at the site were below both class GA standards and MCL's for drinking water in New York State.

Groundwater at the Associated Drapery site was found to be contaminated by inorganic compounds. Maximum contaminant levels established for primary inorganic contaminants including Beryllium (4.4 ppb), Chromium (122 ppb), and Lead

(61 ppb) were exceeded in groundwater collected from MW-1H. It should be noted that Beryllium was also identified in laboratory blanks. MCL's for secondary inorganic contaminants were exceeded for Iron, Manganese and Sodium in both monitoring wells, and zinc in well MW-2H.

Water quality at the Associated Drapery site was also evaluated with respect to current hydrogeologic conditions for the study area. Review of the groundwater contours prepared for the shallow portion of the upper glacial aquifer in Section 3.5 indicate that groundwater flows from southwest to northeast beneath the Associated Drapery site, toward Glen Cove Creek. Since local groundwater flow is modified by topographic highs to the west, it appears that Pass and Seymour may not be directly upgradient of the site, and any contamination detected in groundwater beneath Associated Drapery is likely the result of on-site activities.

The composition and concentrations of organic and inorganic compounds detected in soil and groundwater at the Associated Drapery site do not suggest prolonged use or improper disposal at the site. Neither of the volatile organic compounds (Trichloroethene, Tetrachloroethene) listed in the Industrial Chemical Profile for the site were detected in soil samples. The single detection of Trichloroethene in groundwater at a concentration of 4 ppb was below both individual and total maximum contaminant levels. Pesticides, PCB's and semivolatile organic compounds were all non-detected or detected at levels below specified soil cleanup

objectives. Contaminant concentrations in groundwater samples were found to be below applicable standards for total volatile organics, pesticides and PCB's.

Maximum contaminant levels for total semivolatile organic compounds were exceeded by 18 ppb in groundwater collected from well MW-1H. Maximum contaminant levels were also exceeded for three primary inorganic contaminants in monitoring well MW-2H. Chromium was detected at a concentration of 122 ppb, lead was detected at 61 ppb and Beryllium at 4.4 ppb. However, Beryllium was also identified in laboratory blanks.

Due to the lack of volatile organic contamination in soils at the site and the low concentrations and mobility of those compounds detected in groundwater, namely semi-volatiles, possibly associated with a fuel oil release and inorganic (metals), it is recommended that the Associated Drapery site be referred to the NYSDEC's Division of Spills Management for further action.

CARNEY STREET WELLFIELD PROPERTY

Soil and groundwater quality at the Carney Street Wellfield were evaluated in Section 5.6 of this report. Review of Section 5.6 indicates that soils at the Wellfield property have been impacted by volatile organic compounds. Halogenated organic compounds including Tetrachloroethene, Trichloroethene and 1,2-Dichloroethene (total) were identified in on-site soil samples. The maximum concentrations of Tetrachlorethene, Trichloroethene and 1,2-

Dichloroethene (total) were .810 ppm, .180 ppm and .310 ppm, respectively.

The aromatic organic compounds detected in on-site soils were Ethylbenzene and Xylene (total). These compounds were detected at maximum concentrations of 25 ppm and 110 ppm respectively.

Comparison of concentrations of both halogenated and aromatic organic compounds identified in soils at the Carney Street Wellfield with recommended soil cleanup objectives and cleanup levels (TAGM, 1992) indicate that individual cleanup objectives were exceeded for 1,2-Dichloroethene (total), Ethylbenzene and Xylene. The cleanup objective of 10 ppm established for total VOC's was also exceeded for soils collected from borings S-1 and S-2.

Direct comparison of the volatile organic compounds detected in site soil samples with the Industrial Chemical Profile for the study area was not possible since the Wellfield is a non-industrial location and therefore was not part of the Health Department's profile. However, site inspections and interviews with City of Glen Cove personnel did not reveal any historic or current storage and use of the chemicals listed in the ICP for neighboring facilities. Two of the halogenated organic compounds detected, Trichloroethene and Tetrachlorethene were among those listed in the ICP prepared for Pall Corporation (upgradient).

Review of the groundwater quality data presented in Section 5.6 indicates that groundwater beneath the Carney

Street Wellfield property has been impacted by volatile organic compounds. Halogenated organic compounds including Tetrachlorethene (130 ppb), Trichlorethene (60 ppb), 1,1-Dichloroethene (89 ppb) (total) and Vinyl Chloride (180 ppb), were all detected in groundwater at concentrations above their respective maximum contaminant levels (MCL's).

Aromatic organic compounds including Toluene (25 ppb), Ethylbenzene (500 ppb) and Xylene (total) (1400 ppb) were also detected at concentrations above their respective MCL's. All three compounds were detected in groundwater collected from temporary monitoring well GW-1. Total volatile organic compound concentrations in groundwater collected from the two on-site wells, GW-1 and GW-2 were 3,152 ppb and 606 ppb, respectively. Both concentrations exceed the MCL of 100 ppb established for total principal and unspecified volatile organics.

Groundwater quality at the Carney Street site was also evaluated with respect to hydrogeologic conditions in the study area. The current groundwater flow direction is from southeast to northwest beneath Wellfield property (Figure 6). If this was the predominant flow direction during the time of groundwater sampling, then it is possible that some of the volatile organic compounds detected in groundwater at the Wellfield site may have migrated from upgradient sources. Since there is no present or historic use of solvents on Carney Street property, it is possible that the halogenated organic compounds observed in groundwater originated from

industrial sites to the south. The composition and concentration of aromatic species in groundwater at the site suggest that they originated from an on-site source, possibly a localized petroleum spill.

Several volatile organic compounds were detected in on-site soils collected beneath the Carney Street Wellfield property. A single halogenated compound, 1,2-Dichloroethene (total) exceeded its individual soil cleanup objective by .01 ppm. Since there is no current or historic source of chlorinated solvents at the site, it is unlikely that this compound originated from an on-site source.

The detection of several halogenated organics including Tetrachlorethene and Trichlorethene in groundwater beneath site at concentrations above their respective maximum contaminant levels coupled with their occurrence in groundwater and their historic use in industrial activities at locations hydraulically upgradient of the site also suggest that they may be derived from an offsite source(s).

The presence of aromatic compounds in on-site soils and groundwater concentrations above soil cleanup objectives and maximum contaminant levels in groundwater indicate that they were derived from some form of on-site spill. However, the localized nature of the spill (detected in one boring location) and the lack of floating product suggest that any potential threat to the environment and public health is minimal. Since there is currently no recognized source of these compounds on site, it is recommended that the potential

spill condition be referred to the New York State Department of Environmental Conservation, Division of Spills Management for further action.

7.0 References

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