

PALL

PHASE II REMEDIAL INVESTIGATION REPORT
(VOLUME 1 OF 3: REPORT, FIGURES & TABLES)

PALL CORPORATION
30 SEA CLIFF AVENUE
GLEN COVE, NEW YORK

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1.0 INTRODUCTION

This Phase II Remedial Investigation (RI) Report presents the findings of investigation activities performed at Pall Corporation's (Pall's) 30 Sea Cliff Avenue facility located in Glen Cove, Town of North Hempstead, Nassau County, New York. A site location map and site plan are presented in Figures 1-1 and 1-2, respectively. The Pall property is listed by the New York State Department of Environmental Conservation (NYSDEC) as a Class 2 Inactive Hazardous Waste Disposal Site (NYSDEC Site No. 1-30-053B). The NYSDEC has also listed the August Thomsen property located at 36 Sea Cliff Avenue as part of the Pall Inactive Hazardous Waste Disposal Site. The work completed during the Phase II RI was performed pursuant to the Order on Consent between Pall and the NYSDEC (Order on Consent No. WI-0831-98-11) and is subject to all terms, conditions, and requirements of that Order.

The terms "site" or "property" when used to describe the subject facilities shall include both the 30 and 36 Sea Cliff Avenue properties, unless the text specifically refers to the Pall property or the August Thomsen property. The term "Remedial Investigation" or "RI" is meant to include both the Phase I and Phase II RI studies collectively. Where differentiation between Phase I- and Phase II RI activities is necessary, the Phase I- and Phase II RI's are identified and discussed independently. The scope of work completed as part of this RI was based upon review of existing site data and preliminary scoping meetings held with the NYSDEC.

1.1 Purpose and Objectives

The work completed was designed to meet the objectives outlined in NYSDEC Technical and Administrative Guideline No. 4025, Guidelines for Remedial Investigation/Feasibility Studies (NYSDEC TAGM 4025, March 31, 1989) and United States Environmental Protection Agency (USEPA) Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (USEPA, October 1988). The site-specific elements of these guidance documents were discussed in the various work plans completed prior to the initiation of fieldwork (see References for additional detail).

Specifically, this Phase II RI has been designed to meet the following objectives:

- Evaluate the results obtained in previous studies performed at the site including the Preliminary Focused Remedial Investigation Data Report completed by Tams Consultants, Inc. and GZA GeoEnvironmental of New York on behalf of the NYSDEC in April 1999 (hereinafter referred to as prepared by the NYSDEC).
- Investigate and determine the nature and extent of soil and groundwater contamination at the site (with a specific focus on chlorinated volatile organic compounds);
- Investigate and confirm the absence or presence of on-site source areas of contamination at previously identified "apparent source areas" during past studies;
- Delineate any on-site source areas (both vertically and horizontally);
- Collect sufficient water elevation data to confirm the potentiometric surface of the groundwater table and the inferred groundwater flow direction;
- Investigate possible historic and current upgradient groundwater contaminants migrating onto the Pall / August Thomsen property;
- Collect sufficient data to investigate and evaluate appropriate remedial technologies for interim remedial measures and/or full-scale remediation or site controls, if necessary.
- Meet the Remedial Investigation requirements set forth by the NYSDEC and USEPA to eliminate or limit the need for additional investigation activities.
- Determine the apparent center of the plume(s) that has been identified near the northern property line of the Pall and August Thomsen sites. Although not a formal objective of the Phase II RI, the extent of the plume(s) were also delineated during the study.

1.2 Site Location and Description

The Pall facility is located at 30 Sea Cliff Avenue (Section 21, Block H, Lot 37), approximately 1/8 mile west of Route 107 and 1/4 mile south-southeast of the Carney Street Well Field. The current Pall property is bordered on the northwest by the August Thomsen portion of the site (36 Sea Cliff Avenue, Section 21, Block H, Lot 320), the northeast by a City of Glen Cove Daycare Center, the south by Sea Cliff Avenue, the east by Route 107, and on the west by the Associated Draperies Facility. Photocircuits Corporation (Photocircuits) and the 45A site

(formerly owned by Pass and Seymour and Slater Electric Company and now operated by Photocircuits) are located to the south across Sea Cliff Avenue. Glen Cove Creek is situated parallel to the west side of the site and runs from the southwest corner, through the western boundary of the site, to the northwest corner. Areas surrounding the site consist primarily of industrial facilities with some residential areas located approximately 1 to 2 miles north, south, east, and west of the site.

What is currently the August Thomsen property at 36 Sea Cliff Avenue was owned by the Pall Corporation until 1971, at which time August Thomsen purchased the property. For this reason, the NYSDEC considers the August Thomsen property part of the Pall site for the purposes of this Phase II RI.

The topography of the site is relatively flat with a gentle slope from the southwest corner of the site (grade elevation of approximately 87 feet above mean sea level, msl) toward the northeast corner of the site (grade elevation approximately 83 feet above msl). The majority of the site is paved and has been since the 1950's. East and west of the site, the topography rises to elevations of 160 to 180 feet above msl. Glen Cove creek is located west of the site, with the streambed present at about 3 to 4 feet below the finished grade of the Pall site. Although Glen Cove Creek was dry throughout the majority of the Phase II RI, the Creek has reportedly flooded in the past during storm events, thereby causing much of the Pall and August Thomsen properties to receive floodwaters from the Creek. The Creek flows from the south toward the north when sufficient water is present to sustain flow.

Based upon historic groundwater elevation data, groundwater flows predominantly from southeast to northwest across the site. However, local groundwater elevation variations imply that there may also be an east-west component of the groundwater flow direction along Glen Cove Creek. Based on the predominant groundwater flow direction, properties south of Sea Cliff Avenue are located hydrogeologically upgradient from the Pall Corporation site.

1.2.1 Current Site Operations

The Pall site is currently used for limited operations that support Pall's filtration business. There are currently approximately 10 employees at the facility, which operates 2 to 3 shifts per day. However, the second and third shifts are limited to only a few employees. Operations currently conducted in the Pall building are limited to a single filter membrane casting line. The only chemicals used under normal operations are lubricating oils, alcohols, hydrochloric acid, sodium hydroxide, dimethyl acetamide (DMAC), PVDF resin, and very small quantities of specialty chemicals. No chlorinated solvents are used at the facility.

Since October 15, 1999, a portion of the Pall building has been leased by Tweezerman, Inc. (Tweezerman). Tweezerman uses the facility for shipping and receiving, and limited repair of personal care tools (tweezers, nail clippers, haircutting scissors, etc.).

The August Thomsen property located on the northern side of the site consists of a single story structure that currently houses operations including production of pastry bags, and assembly of miscellaneous pastry bag accessories. As reported in the 1994 Preliminary Site Assessment (PSA) performed by the NYSDEC, small-scale chemical usage occurs / has occurred in the "wash room" section of the August Thomsen facility where tanks of acids and bases are/were used to wash nickel / silver pastry tubes.

Figure 1-2 shows the general layout of the Pall property and the August Thomsen property on the site.

1.2.2 Site Ownership and Operational History

The site is located in the Sea Cliff Industrial Area, an area that has been used for variable industrial processes from the 1940s to the present. Pall has operated its Sea Cliff Avenue facility since the early 1950s. At various points during that time, the site operations included administration, sales and marketing, pilot studies, product performance evaluations, machining, and manufacturing.

In 1958, Pall constructed what is now the August Thomsen building. From 1958 until 1971, the current August Thomsen building was used by Pall's subsidiary, Glen Components, Inc., as a precision machine shop providing parts to Pall's other divisions. Chlorinated solvents¹ had been used at the site until approximately 1971 at which time their use was discontinued².

The following is a summary of the history of site ownership and operations:

- *1918:* The current Pall building is constructed at the site.³
- *1918 through early 1950's:* The site is operated as an icehouse until purchase and occupancy by Pall in the early 1950's.

¹ For the purposes of this report, chlorinated solvents and chlorinated VOCs shall mean tetrachloroethene, trichloroethene, and their respective degradation products. Freons, while technically chlorinated solvents, shall be discussed independently in this report.

² Some chlorinated solvents may have been purchased for use at the facility after 1971 for lab research and development purposes. However, these purchases were infrequent and only consisted of very small quantities.

³ Several additions and modifications to the original building layout have been made since initial construction. These modifications are not relevant to the Remedial Investigation.

- *1958:* Pall builds the Glen Components building (the current August Thomsen building). Glen Components initiates operations.
- *1958 through 1971:* Glen Components operates in the current August Thomsen building⁴. Pall operates in the main plant building. Chlorinated solvents were used in operations at both facilities.
- *1971 through October 15, 1999:* August Thomsen occupies the 36 Sea Cliff Avenue site. Pall operates out of the 30 Sea Cliff Avenue building. Pall did not use chlorinated solvents for manufacturing at the site.
- *October 15, 1999 to the present:* August Thomsen occupies the 36 Sea Cliff Avenue site. Pall conducts limited operations out of a section of the 30 Sea Cliff Avenue building. Tweezerman operates in the remainder of the 30 Sea Cliff Avenue site. Pall does not use chlorinated solvents at the site.

1.2.3 Immediately Adjacent Properties

In addition to the Pall and August Thomsen facilities that are the focus of the Phase II RI, there are several additional facilities in the area that have used the primary chemicals of concern (e.g., chlorinated volatile organic compounds) throughout their respective operations. The descriptions of each of these facilities were compiled from historic site investigations of the entire Sea Cliff Industrial Area that were publicly available at the time this report was completed. Figure 1-1 provides an overview of the Sea Cliff Avenue industrial area and the relative locations of the Pall site and the adjacent properties.

1.2.3.1 Photocircuits Corporation

The Photocircuits Corporation (Photocircuits) site is located at 31 Sea Cliff Avenue (the south side of Sea Cliff Avenue) across the street from the Pall facility. The site is comprised of multiple buildings that house Photocircuits' process operations which reportedly include printed circuit board manufacturing, machining, metal plating and finishing, and wastewater treatment / chemical recovery. Historically, the Photocircuits facility has stored and used chemicals, including chlorinated organic compounds, throughout the facility. The primary chemical storage area at the facility is reportedly located to the southeast of the main plant building along the eastern side of the site, immediately north of chemical recovery and

⁴ Several additions and modifications to the original building layout have been made since initial construction. These modifications are not relevant to the Remedial Investigation.

maintenance building. This area has also been referenced as the MW-7 area. Chemicals which are currently stored or which were previously stored on the Photocircuits site include, but were not necessarily limited to, hydrochloric acid, sulfuric acid, pm acetate, sodium hydrosulfide, hydrogen peroxide, calcium chloride, 1,1,1- trichloroethane (111TCA), tetrachloroethene (PCE), trichloroethene (TCE), anhydrous ammonia, ammonical etchant, methylene chloride and caustic soda.

Previous environmental investigations have established that chemicals, including chlorinated VOCs, have been released into the environment at the Photocircuits site. The Photocircuits site is currently a Class 2 Inactive Hazardous Waste Disposal Site (Site No. 1-30-009). Based upon groundwater elevation data and the inferred groundwater flow direction in the Sea Cliff Industrial Area, the Photocircuits property, including the chemical storage and chemical recovery areas, are hydrogeologically upgradient of the Pall and August Thomsen sites.

1.2.3.2 Former Slater Electric Site (45A Site)

The former Pass and Seymour and former Slater Electric Company site is located at 45A Sea Cliff Avenue, south of the Pall facility and immediately west of the Photocircuits site. The 45A site was constructed by Slater Electric in 1959 and was operated for more than 20 years by Slater. Historic operations at the site were comprised of electric component manufacturing and assembly. Processes employed in manufacturing reportedly included injection molding, metal stamping and machining, parts washing, cleaning, and degreasing. Historically, the 45A site has stored and used chemicals, including chlorinated organic compounds, throughout the facility. The primary chemical storage area at the facility was reportedly located to the southeast of the main building. Sometime near 1988, the 45A site was acquired by Pass and Seymour Legrande, Inc. (Pass and Seymour) who was engaged in the manufacturing of injection molded plastics at the site. To the best of our knowledge, the site is currently owned by Alpha Forty Five L.L.C. who purchased the property in 1996, and is currently operated by Photocircuits.

Previous environmental investigations have established that chemicals, including chlorinated VOCs, have been released into the environment at the 45A site. Based upon groundwater elevation data and the inferred groundwater flow direction in the Sea Cliff Industrial Area, the 45A property, including the reported chemical storage areas, are hydrogeologically upgradient

of the western portions of the Pall and August Thomsen sites.⁵ The 45A site is currently a Class 2 Inactive Hazardous Waste Disposal Site (Site No. 1-30-053A).

1.2.3.3 Associated Draperies Property

The Associated Draperies property is located at 40 Sea Cliff Avenue and is located immediately to the west of the Pall facility on the western side of Glen Cove Creek. The site was formerly owned and operated by HMS Machine Shop, who reportedly conducted machining operations at the site and reportedly used a variety of chlorinated solvents in their operations.

1.2.3.4 Carney Street Well Field Properties

The Carney Street Well Field property is located immediately north of the site and is accessible via the Arterial Highway (Rt. 107). The Carney Street Well Field site currently contains several buildings with operations including a day care center, a City of Glen Cove Water Department operations center, and an Emergency Medical Services (EMS) garage.

Reportedly, the Water Department Building has been occupied since the early 1950's and was the center for operation of three public water supply wells (N-3466, N-8326, and N-8327), which were operated at various times from approximately 1952 through 1977. The EMS garage was constructed in the mid 1970's and is used to house emergency vehicles. It has not been confirmed whether vehicle repairs occur in the EMS garage or not. The day care center was constructed on the well field property in 1989 and was expanded in 1992. There was no evidence of any significant chemical usage on any of these properties at the time of this report; however, the nature of activities at the Water Department Building and the EMS garage suggests that chemicals could have been used in the past as part of their operations (e.g., cleaners, oils, lubricants, disinfectants, etc.). In addition, the 1994 PSA revealed low levels of chlorinated organic compounds in soils underlying the City of Glen Cove property(s).

Based upon groundwater elevation data and the inferred groundwater flow direction in the Sea Cliff Industrial Area, the Carney Street Well Field properties are located hydrogeologically downgradient of the Pall, Photocircuits, and 45A sites.

⁵ As discussed later in the text, the groundwater underlying the 45A site was influenced by historic supply well pumpage and groundwater modeling has shown that the majority of the Pall and August Thomsen properties were located downgradient of the 45A site during historic pumping scenarios.

1.2.4 Neighboring Community

The neighboring community beyond the properties immediately bordering the Pall site is comprised of a mix of industrial, commercial, and residential properties. Industrial properties are located primarily within a ½ mile radius of the site with the majority of sites to the northeast. Commercial properties (e.g., deli's, offices, etc.) are located primarily to the east along the Arterial Highway and Glen Cove Road. Residential properties are located further from the site to the south, east, west, and north.

1.3 Database Reviews

In order to supplement the information available regarding the environmental history of the subject and neighboring properties, a private database service was utilized to obtain regulatory information related to spill records, tank registrations, and other pertinent environmental issues. A database report was provided by Environmental Data Resources, Inc. (EDR) on December 21, 1999, for properties including the Pall site and other sites within an approximate one-mile radius of the Pall site. The sections of the EDR report pertaining to the Pall site and the immediately adjacent properties are provided in Appendix A. A summary of the database review is provided below.

Table 1-1 identifies the spills reported for the Pall, August Thomsen, Photocircuits, Slater, Pass and Seymour, Associated Draperies, Carney Street Well Field, and Kelly Street Well Field sites. As indicated in the table, there were nine (9) NYSDEC SPILLS sites listed: one (1) at the Pall site, four (4) at the Photocircuits site, three (3) at the Slater (45A) site, and one (1) at the Kelly Street Well Field. Of the releases indicated, the most significant releases were a 10,000 gallon (approximate) release at Photocircuits when an underground wastewater pipe broke releasing its contents to soils and the Glen Cove Creek, a UST failure at the 45A site, and a release of approximately 254 gallons of an oil/water mixture at the 45A site.⁶ The spill on the Pall site occurred on January 20, 1989 when approximately 150 gallons of Santoflex #13 (a non-chlorinated, non-soluble anti-ozonant) were accidentally discharged to Glen Cove Creek. The 150 gallons were not soluble in water and were recovered. The NYSDEC closed the spill on January 20, 1989. The database did not indicate whether chlorinated hydrocarbons were present in any of these reported spills on the Pall, Photocircuits, or 45A sites. It should be noted that the earliest spills records recorded in the EDR database dated back to the 1980's.

⁶ The 254 gallon estimate represents the free volume that was recovered. It is probable that a higher volume was actually released because there were also soil impacts.

Therefore, the absence of spill records prior to the 1980's should not be interpreted to conclude that there were, or were not, releases prior to the 1980's.

The EDR report also identified registered, chemical bulk storage (CBS) tanks present on the properties. No CBS tanks were included in the database for the Pall facility. According to the database review by EDR, there are over 200 CBS tanks located on the Photocircuits site. The tanks at the Photocircuits site can be classified by content into the following general categories; 40% unknown material or missing data, 21% acids and bases, 18% metal and plating solutions, 15% used as rinse tanks, 4% solvents (alcohol and organics), 1.5% wastewater and 0.5% oil and petroleum hydrocarbons. These indoor and outdoor tanks are located aboveground. The inclusion of tanks in the database should only be interpreted to mean that tanks exist and are properly registered, no conclusions should be drawn regarding the integrity, or lack of integrity, of tank systems included in the database. Refer to Appendix A for additional information.

Additional information regarding Resource Conservation and Recovery Act (RCRA) status, as well as other regulatory program data were present in the database report. However, the additional data were not considered directly relevant to the completion of this Remedial Investigation.

1.4 Previous Environmental Studies

The Sea Cliff Avenue Industrial Area has been the subject of several environmental studies in the past. A brief summary of the key historical environmental studies is provided below. Additional information is provided in the References.

A report entitled Final Draft, Site Inspection Report, Photocircuits Div./Kollmorgen Corp., Glen Cove, Long Island, New York (NUS, 9/89) documents site history at the Photocircuits facility and the closing of the Carney Street Well Field. According to the report, the Carney Street Well Field was closed in July 1977 due to the presence of chlorinated solvents in the water supply wells. According to a report written by the Nassau County Department of Public Works (NCDPW) entitled, Engineering Investigations at Inactive Hazardous Waste Sites, Preliminary Site Assessment (NCDPW, 3/94) concentrations of methylene chloride, PCE, 111TCA, TCE, 11DCE, 11DCA, and toluene were reported in soils collected at the Photocircuits site in excess of State cleanup objectives. It was reported that groundwater samples collected from the Photocircuits property were contaminated with methylene chloride, PCE, and TCA at concentrations which ranged from 13 to 420 times the State Maximum Contaminant Levels (MCLs) for these compounds in groundwater. The report also stated that various volatile organic compounds (VOCs) were detected in soils collected from the Pall property; however, xylenes were the only compounds detected in the soil at concentrations in

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excess of State cleanup criteria. Several volatile organic compounds were detected in shallow groundwater beneath the Pall site.

A report entitled, Groundwater Sampling and Analysis Report, Pall Corporation, 30 Sea Cliff Avenue, Glen Cove, NY (FDGTI, 12/96) compiled laboratory analytical results of groundwater samples which were collected from six (6) existing monitoring wells at the Pall Facility. Laboratory results indicated that several chlorinated VOCs (Vinyl Chloride, 1,1-DCA, 1,2-DCE, TCA, TCE, and PCE) exceeded their respective NYSDEC Class GA Groundwater Quality Standards.

The Remedial Investigation/Interim Remedial Measure Work Plan, Photocircuits Corp., 31 Sea Cliff Avenue, Glen Cove, NY (McLaren Hart 3/97) provided a strategy for the implementation of a site investigation and remediation activities at the Photocircuits site. The report states that preliminary investigations by McLaren/Hart indicated that groundwater flow near the Photocircuits site is to the northwest. In addition, the report describes a chemical storage area near MW-7 on the Photocircuits property that is comprised of drums and approximately 20 aboveground storage tanks.

1.5 Overview of RI Report

This Phase II RI report has been divided into seven (7) primary sections. ***Section 1, Introduction***, provides an overview of the RI Report, a brief history of past environmental studies, and a general site description. Detailed information on past environmental studies is included in the references.

Section 2, Physical Setting of the Study Area provides a more detailed description of the regional and site-specific geology and hydrogeology that impacts contaminant fate and transport at the site.

Section 3, Site Investigation Scope and Procedures discusses the general scope of the Phase II RI and a description of the field, laboratory, and office procedures that were implemented to meet data quality objectives.

Section 4, Nature and Extent of Contamination presents the findings of the Phase II RI as well as a summary of the RI work completed by GZA and TAMS on behalf of the NYSDEC. This section presents all soil, groundwater and surface water data obtained at the site and a discussion of possible source areas. Analytical tables and contaminant concentration figures are introduced in this section. This section focuses on the on-site investigation.

Section 5, Limited Off-Site Investigation discusses the limited soil and groundwater sampling program conducted off-site at the NYSDEC's request. Data discussed in this section are being presented solely to better characterize the nature and extent of contamination in the Sea Cliff Industrial Area as a whole and are not intended to imply any relationship to contaminants detected on the Pall property, unless specifically stated in the text.

Section 6, Fate and Transport of Contaminants discusses the migration of contaminants in various media and the interrelations between soil, groundwater, surface water, and air. This section focuses on the following: (1) movement of contaminants from apparent source areas over time, (2) an evaluation of potential receptors, (3) groundwater flow issues and, (4) contaminant migration through various transport mechanisms.

Section 7, Conclusions and Recommendations summarizes the data presented in the previous sections and makes recommendations for future activities. This section will focus on the identification and delineation of apparent source areas and the determination of areas that may warrant either remedial actions or site controls.

2.0 PHYSICAL SETTING OF STUDY AREA

This section of the RI Report provides an overview of the Sea Cliff Avenue Industrial Area.

2.1 Regional Setting & Land Use

The area surrounding the Pall site is predominantly comprised of industrial facilities. Commercial facilities are located east of the site along major thoroughfares where shopping centers exist. Residential communities lie approximately 1 to 2 miles in all directions around the site.

Although a formal well survey was not performed as part of this RI, it is believed that all facilities within a 1 mile radius of the subject property are connected to the municipal water supply system and that private wells are not used for potable water. However, numerous industrial water supply and diffusion wells have reportedly operated, and may continue to operate, in the Sea Cliff Industrial Area. These wells have created a complex, three-dimensional groundwater flow environment that has greatly impacted contaminant fate and transport in the area. The nearest surface waters, other than Glen Cove Creek that runs through the property, are predominantly located upgradient and to the west of the subject property or far to the north.

2.2 Site Topography and Features

The subject property is relatively flat and is almost entirely covered by asphalt except for a small planting area at the front (south) of the facility, along the eastern border, and immediately adjacent to Glen Cove Creek. There are two main structures on the site; the Pall building and the August Thomsen building (see Figure 1-2). In addition, there are several small sheds used for the small-scale storage of chemicals or other products near the rear (north) of the Pall building.

The site is accessed from Sea Cliff Avenue via two roadways, one on each side (east and west) of the Pall building. August Thomsen employees typically enter the site via the western access road and typically park on the east side of the August Thomsen building. Parking for Pall employees is provided at the southeast side of the site near the main entrance and at the rear of the Pall building at the approximate center of the combined Pall and August Thomsen properties. There are no major surface obstructions, other than those previously stated, on the subject property.

The site contains numerous underground utilities including gas mains, electric service, water mains, and sanitary and process wastewater disposal lines via the municipal sewer system.

There are no storm drains located on the subject property as all stormwater runoff either enters Glen Cove Creek or runs along the site topography. All plant wastewaters enter the municipal sewer system.

2.3 Regional Geology

The Long Island aquifer system lies within the Atlantic Coastal Plain physiographic province, and is bounded on the north by Long Island Sound, on the east and south by the Atlantic Ocean and on the west by New York Bay and the East River. The evident surficial geologic features on Long Island are a product of continental glaciation. The geologic unit directly underlying the subject site, the Upper Glacial Aquifer, ranges from 260 to 440 feet in thickness, and consists of sandy and silty glacial till deposits grading downwards to finer sands and gravels. This unit is characterized by two distinct zones. The upper zone (commonly 110 – 140 feet thick) consists of sandy and silty till deposits, and the lower zone (150 – 300 feet thick) consists of fine to medium sands grading to fine to coarse sands and fine gravels. The lower zone of this unit also contains thin, discontinuous lenses of silt and clay. Separating the Upper Glacial Aquifer from the Port Washington Aquifer beneath, are the silts and clays of the Port Washington Confining Unit. This unit is continuous, and is related to the Gardiner's Clay present on the south side of Long Island. The Port Washington Aquifer, a local member of the Magothy Formation, is characterized by Cretaceous deltaic sediments consisting of fine to medium sand and is interbedded with clay and sandy clay of moderate permeability and silt and clay of low to very low permeability. The basal 50 to 200 feet may commonly contain coarse sand and gravel. The Lloyd aquifer, which lies immediately above solid bedrock, is approximately 0 - 550 feet thick, and is found 200 - 1,800 feet below the surface. It contains fine to coarse sand and gravel with a clayey matrix with some layers of silty or solid clay.

2.3.1 Site Geology

Soil boring logs were developed in connection with the RI. Data obtained from the soil boring logs were used to generate several geologic cross-sections across the site to better understand the local soil types and their influence on contaminant transport and fate. The plan indicating the locations of the geologic sections developed is provided in Figure 2-1. The geologic sections along the east, west, and north sides of the site are presented in Figures 2-2, 2-3, and 2-4, respectively. Well completion diagrams and soil logs are provided in Appendix B.

As indicated in Figure 2-2, the western side of the Pall site consists primarily of sand and gravelly sands with silty sands. However, a substantial clayey sand lens approximately 5 to 15 feet thick is present between MW-11PD and MW-13PD from approximately 30 feet below grade at MW-13PD to about 60 feet below grade at MW-11PD. A second sand and clay layer

is also present throughout the entire northeast side of the site at a depth of approximately 85 feet bgs. This sand and clay layer is approximately 4 feet thick near MW-5PD and MW-11PD but thins out to only a fraction of a foot at MW-6PD. Contaminants migrating northward would be expected to be more mobile in the sand and gravelly sand portions of the site.

The geology along the east side of the site has significantly more clay at the south site boundary with clayey sands also present at depths of about 90 to 100 feet bgs throughout the site (see Figure 2-3). The presence of a significant amount of clay near MW-1PD may explain why the levels of contaminants at this well have always been lower than nearby wells. Conversely, MW-2AD is set in an area consisting predominantly of sands and gravelly sand. This well has consistently contained higher levels of contaminants in groundwater.

The north cross-section (Figure 2-4) indicates that the vast majority of the north section of the site consists primarily of sands from just below grade to about 100 feet below grade. A 4 to 10 foot thick, continuous lens of silty sand was also present at a depth of about 70 feet bgs across the north side of the site. Not surprisingly, the highest levels of contaminants detected were at wells installed primarily in the sandy regions of the site.

2.4 Regional Hydrogeology Overview

Most of Long Island's groundwater is contained in three major aquifers: the Upper Glacial Aquifer, the Magothy Aquifer (which includes the Port Washington Aquifer), and the Lloyd Sand. The topmost hydrogeologic unit, immediately underlying the site, consists of Pleistocene glacial till and outwash sediments. Predominant regional groundwater flow is to the north and south, away from the water table divide along the center of the island. Localized flow is generally towards the northwest. Vertical groundwater flow is restricted by discontinuous silt and clay lenses, and confining clays such as the Port Washington confining unit.

2.4.1 Site Hydrogeology Overview

Groundwater was encountered onsite at depths ranging generally from 2 to 6 feet below grade surface (bgs). Hydraulic conductivity testing previously performed in the Upper Glacial Aquifer present onsite, indicates that the conductivity of the shallow onsite sands (less than 20 feet deep) ranged from 5×10^{-4} to 4×10^{-2} centimeters per second (cm/sec). The hydraulic conductivity of shallow-to-intermediate soils (approximately 26 feet BLS) ranged from 9×10^{-5} to 7×10^{-3} cm/sec. One intermediate well measurement (MW6P; 65 feet BLS) indicated a measured conductivity of 6×10^{-5} cm/sec.

Additional discussion of the local and site-specific hydrogeology and its influence on the contaminant distribution at the site is presented in Section 4.2.1.

3.0 SITE INVESTIGATION SCOPE AND PROCEDURES

This section of the RI Report describes the scope of the field investigation and the procedures performed to meet data quality objectives.

3.1 Review of Historical Information

Prior to scoping the RI and the initiation of field activities, a thorough review of historical environmental information was conducted. This information was summarized briefly in Section 1.4. In addition, an independent database service was contracted to provide publicly available information regarding chemical usage, regulatory status, and other pertinent issues that may impact the site. The database review was summarized in Section 1.3.

Additional information is provided in the references and appendices.

3.2 Areas of Potential Concern Evaluation

Based upon the review of previous studies, several areas of possible environmental concern were identified:

- *AOC #1:* The plume (Plume Alpha) currently centered near the MW-5 well cluster at the downgradient (north) property line of the Pall and August Thomsen properties.
- *AOC #2:* A small area near the northwest corner of the August Thomsen property where a former PCE tank reportedly existed;
- *AOC #3:* A grassy area near the northwest corner of the Pall building reportedly used in the past for the temporary storage of chemicals;
- *AOC #4:* The chemical storage shed on the Pall property;
- *AOC #5:* A small area adjacent to a plant exit at the northwest corner of the Pall building where rinsing of empty chemical containers had reportedly been performed in the past;
- *AOC #6:* The upgradient border of the property along Sea Cliff Avenue where migration of contaminants onto the Pall property from off-site sources has been documented (Plume Beta).

Each of these areas of concern was fully investigated during the Phase II RI. The possible areas of concern are identified on Figure 3-1.

For discussion purposes, three (3) locations with present-day, groundwater impacts have been identified at the site and surrounding areas as Plume Alpha, Plume Beta, and Plume Gamma. Plume Alpha is currently located near the north property line of the Pall site near MW-5P. Plume Beta is currently located along the south property line of the site and is taken to represent all plumes migrating onto the Pall site from locations south of Sea Cliff Avenue. The current locations of Plume Alpha and Plume Beta are indicated in Figure 3-1.

Plume Gamma is currently located off-site near the MW-2G well cluster on the City of Glen Cove property located north-northwest of the Pall property (see Figure 5-2). It is stressed that the designation of these areas of the site as Plume Alpha, Plume Beta, and Plume Gamma is solely to facilitate the text of this report. In actuality, these *plume(s)* may all be a common, single *plume* that has migrated over time or the combination of multiple smaller plumes. The assignment of arbitrary plume designations should not be interpreted to mean that the plumes are definitively representative of different source areas.

3.3 Soils and Vadose Zone Investigation

The soil and vadose zone investigation was completed in several phases. The first phase of study was completed by the NYSDEC⁷. This investigation consisted of numerous soil borings located throughout the property to identify possible areas of concern in both shallow (above the water table) and deeper (below the water table) soils. Based upon the results of the Phase I RI soil investigation, a second phase of soil sampling was performed during this Phase II RI to delineate any possible areas of concern identified during the Phase I RI field sampling program. The following sections describe the work performed during both phases of the RI⁸. The results of the soil sampling program are discussed in Section 4.1.

3.3.1 Phase I RI Scope and Procedures - Soils

According to the "Preliminary Focused Remedial Investigation Data Report" prepared by the NYSEDC, the following scope of work was completed during the Phase I RI.⁹

⁷ The Phase I RI study was actually completed by TAMS and GZA who were contractors for the NYSDEC. For simplicity, this study shall be referenced in the text as the Phase I RI completed by the NYSDEC.

⁸ When the term "RI" is used without clarification as the "Phase I RI" or the "Phase II RI," it should be interpreted to mean both phases of the RI.

⁹ The scope of work described in this report for the Phase I RI is based upon the text of the "Preliminary Focused Remedial Investigation Data Report." The inclusion of the Phase I RI data in this report is not intended to state or imply Pall Corporation's acceptance or rejection of the data or conclusions.

Soil samples were collected by advancing the Geoprobe into the overburden. Soil samples were collected using a truck mounted Geoprobe unit equipped with a two inch outside diameter (OD) by four-foot long sampler. The Geoprobe unit included a hydraulic push/hammer that was used to advance the sampler. Fifty (50) Geoprobes were installed at the site during the Phase I RI. From the fifty (50) soil borings completed, thirty-nine (39) soil samples were collected from 2' to 12' bgs (SGB borings), eight (8) soil samples were collected from 2' to 7' bgs (DGB borings), and three (3) soil samples were collected from underneath the Pall building (APW borings). Locations where Geoprobe borings were installed during the Phase I RI are shown on Figure 3-2.

Soil samples were field screened prior to analytical testing. The photoionization detector (PID) used during the field screening program was a Thermo-Environmental Model 580B which was calibrated daily to zero air and a 250 parts per million (ppm) isobutylene/air mixture in accordance with manufacturer's recommendations.

Soil screening was completed by holding the probe of the PID directly over the sample and then obtaining a PID reading. In addition, headspace screening was also performed by collecting soil screening samples in containers and then allowing the vapor above the soil sample to equilibrate. For headspace screening, a hole was made in the lid of the sample jar and 30 ml of sample air was withdrawn from the headspace using a gas tight syringe. The test sample was injected into the PID and the peak response was recorded. A response of less than 1 part per million (ppm) above ambient background using this method was not considered significant and was reported as not detected. A syringe blank was run between test samples to check that extraneous contamination was not carried over.

Based upon field screening results, select soil samples were submitted for laboratory analyses.

3.3.2 Phase II RI Scope and Procedures-- Soils

Following the Phase I RI study completed by the NYSDEC, Pall initiated a Phase II RI to verify the analytical data obtained during the Phase I RI soil investigation and to address several data gaps from that investigation¹⁰. The locations of the Phase II Geoprobe borings are shown in Figure 3-3.

The samples at each location were collected using a Geoprobe sampling rig. The sampling procedure consisted of pushing 1-inch diameter stainless steel rods to the desired sampling

¹⁰ For the purposes of this report, the Phase II RI is defined as the work completed by Enviro-Sciences, Inc. and others on behalf of Pall, following the NYSDEC study.

depth. The sampling rods were lined with acetate liners. Upon advancement to the desired depth, the sampler was retrieved from the subsurface and the sample liner removed from the stainless steel rods. The soil samples were transferred from the sample liners and placed into laboratory prepared sample containers. Following collection, the sample containers were labeled with a unique sample identification number, date and time of collection, sampler's initials, and the analyses requested. The sample containers were then placed into a cooler with ice pending transportation to the laboratory. Chain-of-custody documentation was maintained at all times during the soil sampling events.

Based upon the results of the initial Phase II RI soil investigation and discussions with the NYSDEC, it was determined that additional delineation activities were required in four (4) locations: two on the Pall property (near SB-5 and SB-7); one on the August Thomsen property (near SB-1)¹¹; and, one off-site on the City of Glen Cove property. Thirty-five (35) additional soil samples were collected at these four locations. An overview of the sampling locations is provided on Figure 3-3. The detailed sampling grids at the SB-5 and at SB-7 are indicated in Figures 3-4 and 3-5, respectively. The off-site soil sampling program at GP-41 is described later in the text. The sampling procedures employed during this phase of the study were the same as those discussed previously.

Following collection, soil samples were transported to H2M Laboratories (H2M) of Melville, New York for analyses. Each sample was analyzed for volatile organic compounds (VOCs) using U.S Environmental Protection Agency (EPA) Method 8260. All analytical procedures, documentation, and reporting were conducted under CLP ASP Category B protocols.

During the installation of monitoring wells, soil data was also collected to better define the types of soils underlying the site and the impact of the types of soils on the nature and extent of contamination at the site. Soil samples during monitoring well installations were not submitted for laboratory analyses and were solely used for field screening and borehole logging. During deep well installations, soil samples were collected at approximate 5-foot intervals using split spoon samplers. The soil collection procedure during monitoring well installations consisted of advancing a 1.5 inch diameter by 24-inch long split spoon sampler into the subsurface using a 144 pound hammer. The number of blows required to advance the sampler 6-inches was counted. The process was repeated until the sampler had been advanced 24-inches. The sampler was then retrieved from the subsurface. Soil samples were retrieved from the sampler and field screened for the presence of organic vapors by placing soil into a jar and covering the

¹¹ This area has also been referred to as the SGB-29 area. For consistency, the SB-1 area shall be used throughout the text.

jar with foil. The jar was allowed to remain undisturbed for approximately 5 to 10 minutes to allow any organic vapors in the soil to volatilize from the soil and equilibrate with the remaining headspace of the jar. The aluminum foil was then pierced with the probe of an organic vapor meter. The organic vapor meter is equipped with a PID that measures the concentration of organic vapors in the parts per million (ppm) range. The PID was calibrated daily in a manner similar to that described in Section 3.3.1.

The soil gas screening results were recorded on the drilling logs. Field screening results ranged from 0.0 parts per million (ppm) to 6.4 ppm in the 90-92 foot sample collected from the MW-11P-D boring. These results indicate that no significantly impacted soils were encountered during this investigation, nor were VOCs emitted to the air surrounding the site at levels exceeding regional background levels. Breathing zone VOCs were not detected at levels above background levels. Following field screening, the samples were logged in general accordance with the Unified Soils Classification System (USCS) in order to supplement existing site geologic information. Soil boring logs are provided in Appendix B.

Soil cuttings generated during Phase II drilling activities were placed into Department of Transportation (DOT)-approved 55-gallon, steel drums. The drums were labeled as containing non-hazardous wastes and included the boring number and date on which they were derived. At the completion of Phase II drilling activities, the drums of soil were removed from the site by Fenley-Nicol, Inc. of Deer Park, New York, for proper disposal. No soil investigation derived wastes were disposed on the subject property.

3.3.3. Soil Analytical Parameters

As indicated in the NYSDEC "Preliminary Focused Remedial Investigation Data Report," Thirty-four (34) soil samples were collected from shallow soil borings at depths ranging from 2 to 12 feet bgs. In addition, eight (8) shallow soil samples were also collected from 2 to 7 feet bgs in deep Geoprobe borings and three (3) samples were collected from 2.5 to 3.5 feet bgs in the interior Geoprobe locations. Sample locations are provided on Figure 3-2. Each of the Phase I soil samples was analyzed for Target Compound List Volatile Organic Compounds (TCL-VOC). Six samples (SGB-7-2, SGB-21-2, SGB-22-3, SGB-22-3R, SGB-23-3R, and SGB-30) were analyzed for TCL Semi-Volatile Organic Compounds (SVOCs) and Target Analyte List (TAL) inorganics. Five samples (DGB-1A-7, DGB-3A-3, DGB-7A-7, SGB-23-6, and SGB-30) were analyzed for Total Organic Carbon (TOC).

The Phase I soil samples were analyzed by CompuChem of Cary, North Carolina (NYS Department of Health Environmental Laboratory Program #10065). The samples were analyzed in accordance with the October 1995 Analytical Services Protocol (ASP) and

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Superfund Contract Laboratory Program (CLP) Methods. Following analyses of the samples, the analytical data was validated by URS Greiner, Inc.

Soil samples collected during the Phase II RI were analyzed according to the requirements of the October 1995 Analytical Services Protocol (ASP) Method 8260 for priority pollutant VOCs with individual xylene isomers. Analyses were performed by H2M Laboratories of Melville, New York, a NYSDOH ELAP certified analytical laboratory for the parameters analyzed. A data usability review was completed for Phase II data in accordance with NYSDEC guidance by IT Corporation.

3.4 Groundwater Investigation

Like the soil investigation, the groundwater investigation was also conducted in phases. The first phase of work was completed by NYSDEC and consisted primarily of sampling existing monitoring wells (shallow wells only) and the collection of grab groundwater samples using a Geoprobe. The second phase of the groundwater investigation was significantly more comprehensive and included additional Geoprobe screening and the installation of 32 new monitoring wells in a series of well clusters so that shallow (less than 15 feet below grade), intermediate (40 to about 60 feet below grade) and deep (90 to about 110 feet below grade) groundwater quality could be evaluated. The procedures followed during the Phase I and Phase II groundwater investigations are discussed below.

3.4.1 Phase I RI Scope and Procedures - Groundwater¹²

According to the NYSDEC "Preliminary Focused Remedial Investigation Data Report," Phase I RI groundwater samples were collected by NYSDEC representatives using a pre-cleaned stainless steel SP15 screen point sampler. To collect groundwater using this sampler, a pre-cleaned stainless steel SP15 unit was threaded onto the leading end of a probe rod and driven to the desired sampling interval. Once at the desired depth, the tool string was retracted while the screen was held in place. The O-ring at the drive head maintained the seal at the top of the screen while liquids entered the sampler through the screen. The screen point sampler utilized a screen with a slot size of 0.004 inches and an exposed length of up to 41 inches.

¹² The scope of work described in this report for the Phase I RI is based upon the text of the "Preliminary Focused Remedial Investigation Data Report." The inclusion of the Phase I RI data in this report is not intended to state or imply Pall Corporation's acceptance or rejection of the data or conclusions.

Groundwater sample field screening was reportedly conducted in the field and in the office of GZA using a static headspace method on selected groundwater samples. These samples were tested with a portable gas chromatograph (GC) (Photovac Model 10S50) standardized for the following target compounds: PCE, TCE, and 1,2-DCE (trans and cis). A three point calibration was completed on standard samples for each target compound, and a correlation coefficient of greater than or equal to 95% was developed. The typical reporting detection limit for these compounds was about 0.01 parts per million (ppm).

Groundwater samples for field/office screening were collected in 40 ml vials. The vials were filled until overflowing, and a convex meniscus was formed. The vials were capped, inverted, and inspected for the presence of air bubbles. If bubbles were present, the vial was refilled until no bubbles were observed. To prepare the sample for testing, a 15 ml headspace was created in the vial. The vial was then placed in a thermostatically controlled water bath at approximately 30°C. After the sample temperature reached approximately 30°C, the vial was removed from the water bath. A sample of the headspace gas was extracted from the vial using a gas tight syringe. The contents of the syringe were then injected into the GC. Compound identification and concentrations were determined based on comparing the target compound standards to the sample results.

Blank samples of clean air were run between samples that contained detectable levels of target compounds. A mid-point calibration was analyzed once every ten samples or daily, whichever was more frequent. The relative percent difference was less than or equal to 30% compared to the three point calibration. The standard samples were run a minimum of twice per day to calibrate the instrument (at the start and end of each work day). Additionally, duplicate analysis was run on 10% of the samples.

Bailers were used for sample collection and were equipped with a check valve. Bailers were dedicated, disposable Teflon bailers. According to the NYSDEC, bailers were purchased new for this project and were in the factory provided wrapping upon arrival at the site. Groundwater samples were collected by slowly lowering the bailer into the monitoring wells to limit the amount of suspended sediment in the sample. The volume of water in a monitoring well was calculated based on measurements of the "standing" water column in the well. A minimum of three times the calculated well volume of water was evacuated from the well. This was done using a pump and dedicated tubing. Measurements of pH, turbidity, specific conductance, and temperature were made after each well volume was removed.

The first bailer of water was collected for volatile organic compound (VOC) analysis. A portion of the first bailer was also retained for field measurements of pH, temperature,

turbidity, and specific conductance. Three 40-ml glass vials (with Teflon septa) were used to collect samples for volatile organic analysis (VOC). The vials were filled by gently pouring water from the top of the bailer into the vial until overflowing and a convex meniscus was formed. The vial was then capped, inverted and inspected for air pockets/bubbles that may have been present on the inside surfaces of the vial. If any bubbles or aggregate of bubbles were observed, a new sample was obtained using the same vial. Samples for VOCs were generally not chemically preserved¹³. According to the NYSDEC, sampling was conducted in accordance with the QAPjP except as noted.

3.4.2 Phase II RI Scope – Groundwater¹⁴

The purpose of the Phase II RI groundwater investigation was to evaluate and supplement information regarding groundwater quality in the shallow, intermediate and deep zones throughout the site and vicinity and to determine groundwater flow direction in the site vicinity. A total of thirty-two (32) monitoring wells were installed on-site during the Phase II RI:

- MW-1PI, MW-1PD
- MW2AI, MW-2AD
- MW-4PI, MW-4PD
- MW-5PI, MW-5PD
- MW-8PS, MW-8PI
- MW-10PS, MW-10PI, MW-10PD
- MW-1GS, MW-1GI, MW-1GD
- MW-2GS, MW-2GI, MW-2GD
- MW-11PS, MW-11PI, MW-11PD
- MW-12PS, MW-12PI, MW-12PD
- MW-13PS, MW-13PI, MW-13PD
- MW-14PCD
- MW-15PCD
- MW-16PCI, MW-16PC-D.

¹³ At the project on-set, laboratory jars sent to the site were preserved with hydrochloric acid (HCl). GZA contacted the laboratory to send non-preserved jars. However, preserved jars were used for sample collection until the non-preserved jars arrived.

¹⁴ For the purposes of this report, The Phase II RI groundwater investigation is considered the work completed by Pall and their representatives following completion of the NYSDEC Phase I RI.

The locations of the Phase II RI monitoring wells installed on-site are shown in Figure 3-6.

Two rounds of groundwater sampling were performed as part of the Phase II RI (April 1-6, 1999 and January 13-20, 2000). Additionally, groundwater samples were collected from six Geoprobe borings (GP-40 through GP-45) on April 17, 1999.

A discussion of the procedures employed during the Phase II RI groundwater investigation is provided in the following sub-sections.

3.4.2.1 Well Locations and Installation Procedures

The Phase II RI groundwater investigation consisted of installing the following groundwater monitoring wells from March 9 through March 25, 1999:

- MW-1PI, MW-1PD
- MW-2AI, MW-2AD
- MW-4PI, MW-4PD
- MW-5PI, MW-5PD
- MW-8PS, MW-8PI
- MW-10PS, MW-10PI, and MW-10PD.

Following the initial well installation event in March 1999, two (2) additional groundwater monitoring well installation events were completed in August through September 1999, and November 1999 through January 2000. The following monitoring wells were installed during the second and third well installation events of the Phase II RI:

- MW-1GS, MW-1GI, MW-1GD¹⁵
- MW-2GS, MW-2GI, MW-2GD¹⁴
- MW-11PS, MW-11PI, MW-11PD
- MW-12PS, MW-12PI, MW-12PD

¹⁵ Wells MW-1GS, MW-1GI, MW-1GD, MW-2GS, MW-2GI, and MW-2GD were actually installed off-site on the City of Glen Cove property (see Figure 5-2). Additional discussion regarding these wells is provided in Section 5.0

- MW-13PS, MW-13PI, MW-13PD
- MW-14PCD
- MW-15PCD
- MW-16PCI and MW-16PCD.

A discussion of the well locations and rationale for the well cluster placements follows:

- MW-1PI and MW-1PD - Located on the southwest portion of the Pall Corporation Site. These wells are used to assess the quality of shallow and deep groundwater migrating onto the Pall and August Thomsen sites from upgradient sources (i.e., the western area of Plume Beta). Additionally, these wells supplement information regarding groundwater flow patterns near Glen Cove Creek.
- MW-2AI and MW-2AD - Located on the August Thomsen site, south of the EMS building. These wells serve to assess the intermediate and deep groundwater quality near shallow well MW-2A and in Geoprobe borings SGB-29 and SGB-30.
- MW-4PI and MW-4PD - Located on the Pall site northwest of the chemical storage area used to assess the intermediate and deep groundwater quality in this area.
- MW-5PI and MW-5PD - Located on the Pall site south of the daycare center. These wells serve to assess the intermediate and deep groundwater quality near the northern property line (Plume Alpha). Additionally, these wells supplement information gathered during the Phase I RI that indicated elevated levels of VOCs in the groundwater sample collected from MW-5P.
- MW-6PD - Located on the Pall Site near wells MW-6P and MW-7P. This well assesses the quality of deep groundwater migrating onto the Pall and August Thomsen sites from upgradient sources (i.e., the eastern area of Plume Beta).
- MW-8PS and MW-8PI - Located on the Pall Site at the upgradient property line. These wells were used to assess the shallow and intermediate groundwater quality migrating on-site from off-site sources (i.e., the central area of Plume Beta).
- MW-10P Cluster - Located on the August Thomsen property. This well cluster provides groundwater quality information to supplement data obtained from the MW-5P and MW-2A well clusters and helped to define Plume Alpha.
- MW-11P Cluster - Located on the Pall site between SGB-32 and SGB-33. This well cluster further delineates the current location of Plume Alpha and

characterizes groundwater quality in this area.

- **MW-12P Cluster** – Located near the August Thomsen facility approximately 100 feet southwest of the MW-11P cluster. This well cluster further delineates the current location of Plume Alpha by more thoroughly defining the western extent of the plume.
- **MW-13P Cluster** – Located on the Pall site near DGB-4. This well cluster serves to fill in missing information regarding groundwater quality between upgradient well MW-6 and downgradient wells MW-4P and MW-5P. Information from this well cluster will also help define the extent of Plume Beta migrating onto the Pall property near MW6P at the up-gradient property line.
- **MW-14PCD** - Located upgradient of the site in Sea Cliff Avenue. This deep well serves to characterize the quality of groundwater currently migrating onto the Pall property from offsite and helps to delineate the extent of Plume Beta. When data from this well is used in conjunction with data from off-site wells on the Photocircuits property, a shallow, intermediate, and deep well cluster is completed.
- **MW-15PCD** – Located upgradient of the site in Sea Cliff Avenue. This deep well characterizes the quality of groundwater currently migrating onto the Pall property from off-site and further delineates Plume Beta near MW-8S and MW-8I by completing and MW-8 well cluster.
- **MW-16PCI and MW-16PCD** – Located upgradient of the site in Sea Cliff Avenue. These wells provide data to supplement groundwater quality information obtained from the MW-1 cluster and to characterize the quality of groundwater currently migrating onto the Pall Corporation site from off-site near the western part of Plume Beta.
- **MW-1G Cluster** – Located offsite near the Glen Cove Day Care Center. This well triplet serves to assess the shallow, intermediate, and deep groundwater quality downgradient of the Pall and Photocircuits facilities and to further define the extent of Plume Alpha.
- **MW-2G Cluster** - Located offsite near the City of Glen Cove Water Department. This well triplet serves to assess the shallow, intermediate, and deep groundwater quality down-gradient of the Pall, Photocircuits, and 45A sites. Information from this well was used to better define the extent of the plume currently located near GP-41 (Plume Gamma). Additionally, data collected from this well cluster was utilized in conjunction with new off-site soil data to determine if the two plumes (Plume Alpha and Plume Gamma) are related to a common source or multiple sources.

Monitoring well installation activities were conducted by Fenley & Nicol Environmental, Inc. of Deer Park, New York. Drilling activities were conducted using a Canterra CT-450 hollow

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stem auger drilling rig. Three wells were installed at each well cluster location (except as noted above) and included: one shallow well installed to approximately 15 feet bgs; one intermediate well installed to approximately 50 feet bgs; and one deep well installed to approximately 95 to 105 feet bgs.

For characterizing the lithology underlying the site, soil samples were collected at approximate 5-foot intervals from each deep monitoring well boring¹⁶. The soil samples were field screened for organic vapors and were logged in general accordance with the Unified Soils Classification System (USCS) by the field representative overseeing drilling activities (see Sections 3.3.1 and 3.3.2 for additional information of soil screening during well installations). The borings were advanced to the desired depths using 4.25-inch inner diameter hollow stem augers. Upon advancement to the desired depth, a 10-foot section of 2-inch diameter 0.020-inch slotted Schedule 40 polyvinyl chloride (PVC) well screen attached to a variable length section of 2-inch diameter Schedule 40 PVC well casing was placed into the boring. The augers were removed from the borehole while the well construction was completed. A sand pack of #1 well gravel was placed around the well screen and extended to approximately 5-feet above the top of the screen. A bentonite pellet seal of approximately 5-feet was placed above the sand pack. Native fill was placed above the top of the seal and the remaining annular space was backfilled with Portland cement. The wells were completed with locking well caps, steel covers, and concrete pads. Well construction diagrams are provided in Appendix B.

3.4.2.2 Geoprobe Groundwater Sample Locations and Collection Procedures

During discussions with the NYSDEC, it was determined that a limited off-site groundwater investigation should be included as part of the RI. To meet this objective, six Geoprobe borings (GP-40 through GP-45) were advanced during the Phase II RI for collecting off-site groundwater samples (See Figure 5-2). The Geoprobe groundwater sampling procedure entailed pushing 1-inch diameter by 4-foot long stainless steel rods into the subsurface. After advancement to the desired depth, the stainless steel point was retracted from the lead steel rod. Teflon® or polyethylene tubing was then inserted through the center of the steel rods. A small screened interval (1-2 feet) at the bottom of the tubing allowed water to enter the tubing. A peristaltic pump was then attached to the top of the tubing and a groundwater sample was collected directly from the tubing into laboratory prepared sample containers. The tubing was discarded after each sample is collected.

¹⁶ Soil samples were not collected from borings drilled in Sea Cliff Avenue for safety reasons.

Water samples were collected at depths of approximately 9 and 55 feet bgs from borings GP-40 through GP-45. Following collection, the sample containers were labeled with a unique sample identification number, date and time of collection, sampler's initials, and analyses requested. The sample containers were then placed into a cooler with ice.

Following collection, the samples were transported to H2M Laboratories of Melville, New York for analyses of volatile organic compounds (VOCs) performed in accordance with NYSDEC ASP 10/95 Method 624. Based upon the results of the limited Geoprobe groundwater sampling program at the City of Glen Cove property, the well clusters at MW-1G and MW-2G were installed.

3.4.3 Well Development

Following installation, each of the permanent monitoring wells was developed until free of sand, silt, and clay sized particles to the satisfaction of the field representative overseeing development activities. Well development was performed using an electric submersible pump. The submersible pump was raised and lowered throughout the water column to create a surging action. The surging action generally allows for a more complete removal of fine particles from the annular space of the well. Well development water was placed into 55-gallon drums and staged on-site pending proper disposal.

3.4.4 Well Purging and Sampling

The first round of sampling during the Phase II RI was conducted on April 1 through April 6, 1999. The following wells were included in the first round of sampling:

- MW-1A
- MW-1P cluster
- MW-2A cluster
- MW-2P
- MW-3P
- MW-4P cluster
- MW-5P cluster
- MW-6P, MW-6P-D, MW-7P
- MW-8PS, MW-8PI
- MW-10P cluster
- GC-2S, GC-2D (off-site)

- GC-3S, GC-3M, GC-3D (off-site)
- GC-5S, GC-5D (off-site)

The second round of sampling during the Phase II RI was conducted on January 13 through 20, 2000. The following wells were sampled as part of the second sampling round:

- MW-1A
- MW-1P cluster
- MW-2A cluster
- MW-2P
- MW-3P
- MW-4P cluster
- MW-5P cluster
- MW-6P, MW-6PD, MW-7P
- MW-8PS, MW-8PI
- MW-10P cluster
- MW-11P cluster
- MW-12P cluster
- MW-13P cluster
- MW-14PCD
- MW-15PCD
- MW-16PCI, MW-16PCD
- MW-1GS cluster (off-site)
- MW-2GS cluster (off-site)
- GC-5S, GC-5-D (off-site)
- GC-8S, GC-8D (off-site)
- GC-9S (off-site)

Prior to sampling, the depth to groundwater in each well was measured. The groundwater within each well was then purged using an electric, submersible pump. The submersible pump was decontaminated using an Alconox® and water rinse, followed by a distilled water rinse prior to purging each well. Additionally, new sections of polyethylene tubing were used to purge each well. Field measurements of pH, temperature, conductivity, dissolved oxygen, and turbidity were recorded.

Following the removal of three well casing volumes of water, and field parameter stabilization, well purging was discontinued. The groundwater from each well was sampled, using a new, pre-cleaned, disposable bailer. The groundwater samples were transferred from the bailers to laboratory prepared containers. The sample containers were labeled with a unique sample identification number, date and time of collection, sampler's initials, and analyses requested. The sample containers were then placed into a cooler with ice. In addition to the groundwater samples, quality assurance samples were collected including field blanks, trip blanks and blind duplicate samples. Well sampling and purge logs are provided in Appendix D.

Following collection, the samples were transported to H2M Laboratories of Melville, New York for analyses of volatile organic compounds (VOCs) performed in accordance with NYSDEC ASP 10/95 Method 624.

Groundwater generated during well development activities was placed into DOT-approved 55 gallon drums that were temporarily stored in a central location on-site. Groundwater generated during well purging was also placed into 55-gallon drums for those wells located on-site. Purged groundwater from off-site wells was discharged to the ground surface near the well from which it was removed. The drums containing the groundwater generated during development and purging activities were labeled showing the wells where the water was pumped from, the date of collection and the generator's name. Following development and purging activities, the drums were transported off-site by Fenley & Nicol for proper disposal.

No groundwater investigation derived wastes were discharged at the Pall site.

3.6 Surface Water and Sediment

During Phase I RI investigative activities, three pair of surface water and sediment samples (SW/SED-1, SW/SED-2 and SW/SED-3) were collected from Glen Cove Creek to assess the presence of impacts and to establish if contamination is migrating off-site. Sample locations are provided on Figure 3-3. All samples were analyzed for VOCs. Additionally, sediment sample SED-3 was analyzed for Total Organic Carbon (TOC).

The samples were analyzed by CompuChem of Cary, North Carolina (NYS Department of Health Environmental Laboratory Program #10065). The samples were analyzed in accordance with the October 1995 Analytical Services Protocol (ASP) and Superfund Contract Laboratory Program (CLP) Methods. Following analyses of the samples, the analytical data was validated by URS Greiner, Inc.

3.6.1 Creek Sampling Procedures and Stream Gauging

The Phase I RI surface water samples were collected by lowering laboratory prepared sample containers into the flowing water of Glen Cove Creek and allowing the containers to fill. The sediment samples were collected from approximately 0 to 6 inches in depth along the east side of the stream bank using stainless steel spoons.

In order to establish if the stream was a losing or gaining stream, stream gauging was conducted during the Phase I RI investigation. Staff gauges were installed at four locations (SG-1 through SG-4). The elevation of each staff gauge was measured and depths to the surface of Glen Cove Creek were measured at each location.

An attempt to measure the velocity of Glen Cove Creek was made as part of the Phase II RI. The surface water flow measurements could not be obtained, however, because the velocity of the stream was less than 0.5 meters per second, the minimum necessary to use the flowmeter.

4.0 NATURE AND EXTENT OF SITE CONTAMINATION

This section of the RI Report presents and discusses the results of the on-site soil, groundwater, and surface water investigation activities that were completed during the RI. The results of the limited off-site investigation are presented separately in Section 5.0. For the purposes of the discussion of the nature and extent of site contamination, the upgradient wells located along Sea Cliff Avenue, south of the Pall Corporation property will be considered on-site monitoring wells.

New York State standards and guidelines are referenced throughout the text for comparison to samples collected during the RI. These standards and guidelines are referenced solely as a basis for comparison and are not intended to serve as site-specific action levels or cleanup objectives. The most common standards discussed in the text are the "Recommended Soil Cleanup Objectives" identified in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-40-4046 (NYSDEC, 1/94) and the Class GA Groundwater Quality Standards identified in the NYSDEC Division of Water Technical and Operational Series (TOGS) 1.1.1 (NYSDEC, 6/98)

4.1 Soil and Vadose Zone Characterization

The results of the Phase I RI soil investigation performed by the NYSDEC are presented in Table 4-1 through Table 4-5¹⁷. The soil boring sample locations are shown in Figure 3-2.

The primary contaminants of concern (chlorinated VOCs) were either non-detectable or detected at levels significantly below their respective RSCOs in all samples collected and analyzed by the NYSDEC. Of the 50 samples collected and analyzed, only one sample indicated the presence of any VOCs exceeding NYSDEC Recommended Soil Cleanup Objectives (RSCOs). Soil sample SGB-30 (10' to 12' bgs) contained 2,300 ug/kg of total xylenes, which exceeds the RSCO of 1,200 ug/kg for xylenes. However, this soil sample was collected from below the water table and may have been impacted by the local groundwater quality near the sample location.

Soil samples SGB-21-2, SGB-22-3R, and SGB-30 contained several polynuclear aromatic hydrocarbons (PAHs) at concentrations that slightly exceeded the RSCOs (see Table 4-2).

¹⁷ The scope of work described in this report for the Phase I RI is based upon the text of the "Preliminary Focused Remedial Investigation Data Report." The inclusion of the Phase I RI data in this report is not intended to state or imply Pall Corporation's acceptance or rejection of the data or conclusions.

These compounds were fluoranthene, pentachlorophenol, benzo(a)anthracene, benzo(k)fluoranthene, and benzo(a)pyrene. All exceedances are considered relatively minor and are limited to small areas on the site.

As indicated in the "Preliminary Focused Remedial Investigation Data Report," detectable concentrations of metals were present in each of the six soil samples analyzed for inorganics (see Table 4-3). Since metals are naturally occurring in soils at varying concentrations depending upon the types of soil and the location of the site, the detection of inorganics was not considered unusual or significant. Beryllium, iron, mercury, selenium, and zinc each exceeded their respective RSCOs in at least one sample. However, with the exception of zinc in two of the samples (SGB22-3R and SGB-30) all detected inorganics were detected at concentrations that were within "typical" Eastern USA background ranges.

In order to help evaluate the migration potential for organic compounds detected in soils, the "Preliminary Focused Remedial Investigation Data Report" also presented total organic carbon (TOC) data for select soil samples. TOC concentrations ranged from a low of 777 mg/kg at DGB-3A (7 ft bgs) to a high of greater than 16,000 mg/kg at SGB-30 (11-12 ft bgs)¹⁸.

Based upon the Phase I soil investigation and discussions with the NYSDEC, several areas of the site were designated for additional soil investigation. As agreed upon during preliminary scoping discussions with the NYSDEC, no additional SVOC or inorganic investigation was conducted. Therefore, the Phase II soil investigation focused on VOCs. Eight (8) locations were sampled as the first part of the Phase II soil investigation. The locations of the eight borings are indicated in Figure 3-3. Samples were collected at two depths; a shallow sample was collected at approximately 3' to 4' bgs and a deeper soil sample was collected from approximately 9' to 10' bgs at each soil sample location.

The results of the initial sampling for Phase II are presented in Table 4-6 and are presented graphically in Figure 4-1. As shown in Table 4-6, only two parameters were detected at concentrations exceeding their respective RSCOs. 1,2-Dichloroethene was detected at 1,000 ug/kg in sample SB-5 (3'-4' bgs) and at 400 ug/kg in sample SB-7 (3'-4' bgs). The RSCO for 1,2-Dichloroethene is 300 ug/kg. No parameters in deeper soil samples exceeded the RSCOs demonstrating that the impacts in these areas were limited to shallow soils. M/P-Xylene was detected at a concentration of 2,600 ug/kg at SB-1 (8.5' - 9.5' bgs), which exceeds the RSCO of 1,200 ug/kg for xylenes. Since shallow soils at SB-1 did not contain any parameters at

¹⁸ The laboratory reported TOC as >16,000 mg/kg in sample SGB-30. 16,000 mg/kg is the maximum range for the 10 mg sample collected by TAMS and GZA. The actual TOC value may be significantly greater.

concentrations exceeding their respective RSCOs and the deeper sample was collected from below the water table, the xylenes detected at SB-1 may be the result of groundwater interference. None of the exceedances of the RSCOs was considered significant. However, after consultation with the NYSDEC, a more thorough sampling program at SB-1, SB-5, and SB-7 was initiated to ensure that the source area of soil impacts was as small in scale as indicated by the soil investigations. A comprehensive grid sampling program was established for the SB-5 and SB-7 areas and several soil samples were collected near SB-1. The results of the grid sampling program for the SB-5 and SB-7 areas are presented in Tables 4-7 and 4-8.

At the SB-5 area, fifteen (15) additional soil borings were performed. The SB-5 area soil sample locations are shown in Figure 3-4. The results for all soil sample locations in the SB-5 area are summarized graphically on Figure 4-2. Only one sample location, 5-SB-15 (0' - 4') contained VOCs at concentrations exceeding their respective RSCOs:

- PCE: 950 mg/kg
- TCE: 19 mg/kg
- 1,1,1-TCA: 0.98 mg/kg
- 1,2-DCE: 4.124 mg/kg (total cis- and trans-)

Although this sample is indicative of elevated chlorinated organic compound concentrations in soil, the areal extent of the elevated concentrations is well delineated on all sides except to the north and it appears that the area of elevated concentration is limited to approximately a 10' x 10' area. Additional delineation will be performed as part of a proposed pilot test in this area.

At the SB-7 area, eighteen (18) soil borings were performed. Sample locations in the SB-7 area are shown in Figure 3-5. VOCs at all sample locations were either non-detectable or detected at concentrations significantly below their respective RSCOs (see Table 4-8). The SB-1 area reportedly was the location of an alleged, historical PCE storage tank²⁰. Two (2) additional soil borings were performed to verify the absence or presence of soil impacts resulting from past operations in the area. The sample locations in the SB-1 area are indicated in Figure 3-3. Sample results are presented in Table 4-9. VOCs at all sample locations in the SB-1 area were

²⁰ Research was conducted to determine if in fact, the alleged, historical PCE tank did ever exist. The NYSDEC has not responded to requests for information regarding their tank records and review of an independent database service report (see Appendix A) did not indicate any record of a historic PCE tank in this area.

either non-detectable or detected at concentrations significantly below their respective RSCOs. (See Appendix D for analytical reports).

The extensive soil investigation performed during the Phase I- and Phase II RI's demonstrated that all possible soil areas of concern have been investigated and delineated. There is only one limited area (about 100 square feet to a depth of only about 5 feet below grade) that contains any compounds at concentrations exceeding the NYSDEC RSCOs. This area, located near 5-SB-15, will be addressed as part of a proposed pilot test.

It should be noted that low level, chlorinated VOC impacts were detected in several shallow soil samples throughout the site. It is possible that the low level impacts are the result of creek flooding and the rising water table during significant precipitation events. This scenario would also explain the presence of similar, low level chlorinated VOCs in off-site soil samples taken from the City of Glen Cove property(s) (see Section 5.2.).

4.2 Groundwater Characterization

The groundwater investigation performed as part of this RI involved several major components including: evaluation of historical data; collection of water table elevation data to determine inferred groundwater flow directions; development of a four-dimensional (length, width, depth, and time) understanding of contaminant migration; and, development of a complete picture of current groundwater quality data. The following sections describe the findings of the RI with respect to each of these areas.

4.2.1 Groundwater Elevation, Flow Direction and Properties

This section of the RI discusses historical and current groundwater elevation and inferred flow data.

4.2.1.1 Historical Groundwater Flow Studies

The first documented investigations of the groundwater flow direction at the site were performed in 1989 and 1990 by the Nassau County Department of Public Works (NCDPW) and the Nassau County Department of Health (NCDH). The results were summarized in a report titled "Investigation of Contaminated Aquifer Segment - City of Glen Cove, Nassau County, New York." In connection with the study, the NCDPW installed several shallow and deep wells and attempted to understand the effect of pumping and diffusion wells on the regional geology. In general, the NCDPW report concluded that the shallow (i.e., from the water table to about 15 feet below the water table) groundwater in the area showed a "general

northwesterly regional flow direction with a consistent west to northwest horizontal flow direction south of Sea Cliff Avenue, and northerly flow in the vicinity of Glen Cove Creek.” Glen Cove Creek was determined not to have a significant impact on the regional groundwater flow direction; however, the site specific groundwater elevation contour maps indicated “Glen Cove Creek represents a significant water table discharge point, through and immediately north of the industrial zone along Sea Cliff Avenue.”

The NCDPW study also was the first formal study to look at the vertical flow component of the local groundwater system. Deep Upper Glacial monitoring wells were installed by the NCDPW with screened intervals from 75 to 147 feet below sea level. The deep potentiometric head elevation data indicated that the deep groundwater had a “consistent west-northwest horizontal flow direction at Sea Cliff Avenue bending toward a northwesterly direction northwest of Sea Cliff Avenue.” Vertical groundwater gradients and inferred flow directions were quantified in the NCDPW study by comparing synoptic differences in the hydrostatic heads at well clusters with screened intervals at various depths. During the summer months when industrial and air conditioning pumpage from area supply wells was at its greatest, well clusters at GC-1, GC-2, GC-4, GC-5 and GC-6 demonstrated consistent downward gradients during the NCDPW study (see Figure 4-3 for regional wells installed as part of the NCDPW study). The presence of the downward gradients in the area, coupled with the high volume of pumpage at deep supply wells throughout the area, is the most probable cause of deep groundwater impacts that have been identified throughout the Sea Cliff Industrial Area. Additional discussion on the impacts of supply and diffusion wells on contaminant migration in the Sea Cliff Industrial Area and on the Pall site is provided in Section 6.0.

4.2.1.2 Recent Groundwater Flow Studies

The Phase I RI focused primarily on the site-specific, shallow groundwater table. Groundwater elevation contour plots were developed by the NYSDEC based upon data from ten (10) existing, shallow groundwater monitoring wells (eight on-site and two from the Associated Draperies site) and nine (9) newly installed, shallow piezometers. A summary of the groundwater and surface water elevation data obtained by the NYSDEC during the Phase I RI is presented in Table 4-10. A plot of the groundwater elevation gauging event performed on March 12, 1998, is presented in Figure 4-4. As indicated in the figure, the groundwater flow direction across the site in shallow wells indicated flow from the south-southeast across the site to the northwest. The data also demonstrates that properties south of Sea Cliff Avenue are hydrogeologically upgradient of the Pall facility and any shallow groundwater contamination originating south of Sea Cliff Avenue would flow across the Pall property.

Since the Phase I RI groundwater investigation only focused on the shallow groundwater table, a more comprehensive groundwater investigation was performed as part of the Phase II RI. One of the primary objectives of the Phase II RI groundwater investigation was to obtain a more thorough understanding of three-dimensional groundwater flow and the vertical flow components that may influence the contaminant migration and distribution across the site. To accomplish this objective, a series of cluster wells screened in the shallow (water table to about 15 feet bgs), intermediate (50 to 60 ft. bgs), and deep (90 to 100 ft. bgs) groundwater zones were installed at the Pall and August Thomsen sites. In addition, several deep and intermediate wells were installed in Sea Cliff Avenue to complete well triplets when combined with wells nearby at the Photocircuits site.²¹

Two (2) groundwater elevation gauging events were conducted in connection with the Phase II RI. One of these events, completed on May 6, 1999, was performed in coordination with the NYSDEC so that data from wells located at the Photocircuits and 45A sites could be collected on the same day as the Pall and August Thomsen well gauging event. By performing gauging on all the primary Sea Cliff Avenue Industrial Area sites simultaneously, a more thorough picture of the regional and site-specific groundwater flow direction was developed. The results of the May 6, 1999, well gauging event are summarized in Table 4-11 and presented graphically in Figure 4-5 (shallow groundwater table) and Figure 4-6 (deep groundwater table). Intermediate groundwater potentiometric surface maps are not plotted because insufficient intermediate wells existed at the regional level at the time of well gauging.

An additional round of depth to water measurements was collected on January 13, 2000, after installation of additional shallow, intermediate and deep monitoring wells. The results of the January 2000 well gauging event are provided in Table 4-11 and presented in Figures 4-7 through 4-10. Figure 4-7 indicates that the shallow groundwater flow direction was generally the same as the flow direction identified during previous well gauging events (toward the northwest); however, the water table elevation was approximately two (2) feet lower across the site during the January 2000 gauging event. Sufficient data were available as a result of the January 2000 gauging event to confirm intermediate and deep groundwater potentiometric surface maps as indicated in Figures 4-8 and 4-9, respectively. The groundwater flow direction in the intermediate and deep groundwater zones was also similar to the shallow groundwater flow direction.

²¹ Additional wells were also installed off-site at the City of Glen Cove property. These wells will be discussed in more detail in Section 5.0 of the RI Report.

Following completion of the well gauging events, it came to our attention through the NYSDEC that the City of Glen Cove initiated a pumping test at the Carney Street well field that was included pumping at 1,400 gallons per minute from Well No. 21. The pump test was initiated on January 18, 2000, and lasted approximately 192 hours. ESI and the NYSDEC were not notified in advance of the pumping test so both rounds of well gauging (May 6, 1999, and January 13, 2000) were performed under non-pumping scenarios. Therefore, the discussion of groundwater flow direction and gradients that follows is applicable only to non-pumping conditions at the Carney Street well field.

Gradients were estimated across the Pall site using the following formula:

$$i = \frac{dh}{dl}$$

where:

i = the horizontal gradient (ft/ft)

dh = the change in groundwater elevation over a given horizontal length, dl (ft)

dl = the length over which the groundwater elevation change is measured. (ft)

The horizontal gradients across the site were estimated to be about 0.010 ft/ft near the north and south property lines in the shallow groundwater with a lower gradient of about 0.005 ft/ft present across the middle of the site in the shallow groundwater. In the intermediate groundwater, the horizontal gradient was uniform across the site at approximately 0.010 ft/ft. The gradient across the site in the deep groundwater varied depending upon location. At the southern property line, the gradient was relatively steep compared to the northern property line. In the southern, deep groundwater, the horizontal gradient was approximately 0.010 ft/ft while at the northern end of the property, the deep horizontal gradient was only about 0.003 ft/ft.

Since vertical groundwater flow has been demonstrated to be a major factor controlling contaminant migration in the Sea Cliff Industrial Area, a vertical potentiometric surface map was created using the January 2000 well gauging data (see Figure 4-10). The potentiometric surface map was overlaid on the geologic section along the eastern side of the Pall site to obtain a better understanding of the mechanisms driving contaminant migration in the area. Figure 4-10 reveals that the vertical gradients and flow components vary depending upon location. Near the upgradient property line, the vertical gradient was relatively neutral (no significant upflow or downflow) to a depth of about 100 feet bgs. However, a significant vertical gradient exists across the center of the site toward the downgradient property line to the north. Near the MW-

11P and MW-5P clusters, shallow groundwater (above the clayey-sand at depths less than 55 feet bgs) exhibits a downward gradient that roughly follows the top of the clayey-sand layer at the site. Because of this downward gradient in the shallow groundwater, contaminants near the MW-5P area would be expected at higher concentrations with depth. In addition, a historic, upgradient source in the shallow groundwater would likely travel in the shallow groundwater across the site and then migrate vertically more rapidly near the northern property line. In the deeper groundwater after the thinning out of the clayey-sand layer near MW-11P and MW-5P (greater than 75 feet bgs - see Figure 4-10), an upward gradient was detected implying that very deep groundwater contamination may move toward the surface immediately downgradient of MW-11P and MW-5P.

The vertical potentiometric surface map also shows that, as would be expected, the horizontal gradient is significantly lower at the intermediate depths (40 to about 80 feet bgs) where clays were present. This fact was consistent with the relatively low concentrations of contaminants that were detected in the intermediate monitoring wells screened near less permeable zones when compared to the concentrations of contaminants in the shallow and deeper monitoring wells across the site that were screened near more permeable zones.

It is important to note that the upward gradient in very deep groundwater near the MW-5P and MW-11P clusters and the absence of a similar gradient near the upgradient property line implies that any historic contamination originating very deep upgradient (greater than 100 feet bgs), may be detected in deep, downgradient wells while not being detected in upgradient, shallow, intermediate, and deep wells on the site. This is consistent with the current distribution of the contaminants of concern in the shallow, intermediate, and deep, upgradient and downgradient wells across the site. In essence, Figure 4-10 provides data indicating that the current distribution of contaminants across the site is consistent with the site geology, the horizontal and vertical movement of groundwater across the site, and a possible historic, upgradient source.

4.2.2 Groundwater Analyses

There have been numerous groundwater quality studies performed in the Sea Cliff Avenue Industrial Area. Data obtained from studies prior to this Phase RI are summarized in Section 1.3.3 and additional detail is provided in the references.

4.2.2.1 Phase I RI Groundwater Study

In 1998, the NYSDEC initiated a groundwater quality investigation at the Pall site through the installation of Geoprobe points and collection of grab samples for groundwater. The data

obtained from the Phase I RI groundwater investigation is summarized in Tables 4-12 and 4-13. In general, the groundwater screening program completed by the NYSDEC indicated the presence of chlorinated VOCs throughout the groundwater underlying the site with the highest levels of shallow groundwater contamination (from the water table to about 12' bgs) present at the northern property line at SGB-35 and at SGB-29. However, deeper groundwater (deeper than 38' bgs) had more widespread and consistent contaminant levels both at the upgradient (south) and downgradient (north) sections of the property.

At SGB-35 (8'-12' bgs) within Plume Alpha, 140,000 ug/kg of PCE, 1,800 ug/kg of TCE, and 10,000 ug/kg of 1,2-DCE were detected in the shallow groundwater. However, a sample from a permanent monitoring well collected at the same time, located within 10 feet of the Geoprobe point, screened in the same general interval, and that had been properly developed and purged, indicated levels of PCE more than 4 orders of magnitude lower. For this reason, the results at SGB-35 are not considered reliable as an accurate indicator of localized groundwater quality. Similarly at SGB-29, PCE was detected at 59,000 ug/kg during the Geoprobe sampling events, yet at MW-2A located only about 30 feet away (downgradient), the results for PCE was only 82 ug/kg during sampling events at the same time. In these two instances where permanent monitoring wells were located near Geoprobe grab, groundwater sampling points, the Geoprobe sampling yielded significantly higher results than the more traditional, and reliable, groundwater monitoring wells.

During the Phase I and Phase II groundwater sampling events, VOC concentrations collected at the properly developed monitoring wells typically indicated levels of contaminants several orders of magnitude below the concentrations detected at Geoprobe points near the same locations. For this reason, it is recommended that the Geoprobe, grab, groundwater samples not be used for assessing localized groundwater quality at the site. Rather, it is recommended that the Geoprobe, grab groundwater sample results be used solely as a screening tool (i.e., Geoprobe data for groundwater should be used qualitatively, not quantitatively).

In addition to the chlorinated VOCs that were the focus of the RI, the NYSDEC groundwater screening also indicated the presence of trichlorotrifluoroethane (Freons®) in the form of "tentatively identified compounds" (TICs) throughout the site²². See Table 4-13 for a complete

²² Additional study with respect to Freons was completed during the Phase II RI. As indicated previously, it is possible that the Geoprobe groundwater samples may have been biased high due to the minimal development associated with Geoprobe sampling prior to sample collection, so all Phase I RI groundwater investigation data collected from Geoprobe points should be used cautiously.

listing of tentatively identified Freons detected during the NYSDEC's Phase I RI groundwater investigation.

4.2.2.2 Phase II RI Groundwater Study

In order to better assess groundwater quality in three-dimensions (areal length and width of elevated contaminant levels, plus depth of impacts), an extensive Phase II RI groundwater study was performed. During this study, a total of 10 triplet well clusters were completed on the site and several additional deep and intermediate wells were installed at Sea Cliff Avenue to obtain a better understanding of the levels and types of contaminants migrating onto the Pall property from off-site sources across Sea Cliff Avenue.²³ The on-site well locations are indicated in Figure 3-6. In general, each well cluster consists of a shallow well screened from approximately 5 to 15 feet bgs, an intermediate well screened from approximately 45 to 55 feet bgs, and a deep well screened from approximately 90 to 100 feet bgs. However, the well screen interval was modified in the field if field conditions indicated that an alternative screened interval would be more appropriate because of local geologic and hydrogeologic conditions. The construction elements of each of the monitoring wells installed is presented in Table 4-14. Complete well construction diagrams and associated well logs are provided in Appendix D.

Wells at the site were installed in two phases. The first phase of well installations focused on the Pall / August Thomsen sites and included the completion of well triplets at MW-1P, MW-4P, MW-5P, MW-6P, MW-10P, and MW-2A. During this well installation event, several Geoprobe groundwater samples also were collected off-site at the City of Glen Cove property (See Section 5.0). Following this initial well installation event, groundwater samples were collected and analyzed and it was determined that several additional well clusters would better determine the extent of contamination underlying the site and entering the site from upgradient, off-site sources. Thereafter, well clusters were completed at MW-11P, MW-12P, MW-13P, MW-14PC, MW-15PC (with well MW-8PS and MW-8PI), and MW-16PC²⁴. Figure 3-6 indicates all wells on the subject property as of the date of this report.

Following the initial well installation event, a complete round of groundwater samples was collected in April 1999 from shallow, intermediate, and deep wells on the Pall property. The results obtained during the well sampling event are presented in Tables 4-15, 4-16, and 4-17,

²³ Two additional triplet well clusters were also installed downgradient, off-site at the City of Glen Cove property. The data obtained from these wells is presented in Section 5.0 of this report.

²⁴ Wells MW-14PCD, MW-16PCI, and MW-16PCD form cluster wells when considered in conjunction with off-site wells located on the Photocircuits and 45A sites.

respectively, and graphically in Figures 4-11, 4-12, and 4-13. In the shallow groundwater table, the highest concentrations of VOCs were detected at Plume Alpha in well MW-5P located at the northeastern property line where PCE (110 ug/l), TCE (230 ug/l), cis-12DCE (3,600 ug/l), and Vinyl Chloride (250 ug/l) were detected. Other compounds including chloroethane, 11DCE, and 11DCA were also detected on-site in the shallow wells; however all concentrations detected for these compounds were either below NYSDEC Class GA Quality Standards or only slightly above standards. As indicated by the relatively high concentrations of PCE, 111TCA, and TCE daughter products (i.e., 12DCE, vinyl chloride), the downgradient, shallow contamination at Plume Alpha could be either the result of an historic site release, or the result of an historic upgradient release (near Plume Beta) that is now located at the downgradient property line of the subject site due to the passage of time since the original upgradient release. However, the high detections of vinyl chloride and 12DCE in the deep and intermediate groundwater upgradient and the confirmed surface discharges historically upgradient tend to support a historic upgradient release that has migrated deeper over time at the source, concurrently with shallow migration across the Pall site (i.e., Plume Alpha and Plume Beta may be a common plume). Figure 4-14 indicates the most common PCE, TCE, and 111TCA degradation pathways in the subsurface.

10 ft deeper than downgradient wells
In the intermediate wells, the highest concentrations of VOCs were detected at Plume Beta in MW-6P where 51 ug/l of PCE, 150 ug/l of TCE, 920 ug/l of cis-12DCE, and 68 ug/l of vinyl chloride were detected. Like the shallow groundwater monitoring wells, lesser concentrations of 11DCE, and 11DCA were also detected in the intermediate wells. In general, the chlorinated VOCs of concern were detected at concentrations an order of magnitude higher in the upgradient, intermediate wells (Plume Beta) than were detected in the downgradient intermediate wells (Plume Alpha). This fact indicates that the presence of contaminants on the Pall / August Thomsen site in the intermediate groundwater is primarily, and possibly entirely, the result of an upgradient source.

In the deep well samples, concentrations upgradient and downgradient were generally on the same order of magnitude with the highest concentrations detected at MW-6PD upgradient and at MW-5PD, MW-10PD, and MW-2AD downgradient indicating that Plumes Alpha and Beta may be linked. Concentrations in the deep groundwater at the site at these wells ranged from 8 to 54 ug/l PCE, 53 to 270 ug/l TCE, 3 to 25 ug/l 111TCA, 58 to 242 ug/l 12DCE, and <10 to 26 ug/l Vinyl Chloride.

upgrad MW6PD - 337 ppb TVOCs
downgrad MW5PD - 617 ppb TVOCs
The relative concentrations of PCE to TCE to 12DCE to Vinyl Chloride found on-site are very indicative of a substantially aged, chlorinated VOC release (see Figure 4-14). When the apparent aging of the plume is coupled with the fact that the concentrations of many of the

contaminants of concern were higher in the upgradient, intermediate and deep wells than in the downgradient, intermediate and deep wells, it is apparent that a historic upgradient release is responsible for the much of the contamination underlying the site. The analysis of plume migration and degradation of compounds over time is discussed in additional detail in Section 6.0. and following the discussion of the January 2000 sampling event.

After additional monitoring wells were installed following the April 1999 groundwater sampling event, a second round of groundwater sampling was completed from January 14, 2000 through January 21, 2000. The City of Glen Cove initiated a pumping test at Carney Street Well No. 21 during the middle of the January 2000 sampling event so that some wells were sampled prior to the start of the pump test and other wells were sampled during or immediately following pumping. According to the City of Glen Cove, a pumping test was initiated at Carney Street Well No. 21 on January 18, 2000, and the well pump was run from January 18, 2000, to January 21, 2000, and again on January 24, 2000, through January 28, 2000. Additional pre-pumping activities (e.g., pump system checkout with minor pumping,, etc.) may have occurred prior to January 18, 2000. No advance notice of the pumping test was provided to either Pall or the NYSDEC and Enviro-Sciences only became aware of the pumping test after completion of well sampling. Since all details of the pumping test are unavailable (was any pumping done before the formal January 18, 2000 start of the test?, were lower flow tests run first?, etc.), the results of the January 2000 groundwater sampling must be interpreted with a complete understanding of the scope of the pumping test taken into account. The results of the January 2000 sampling event are summarized in Table 4-18 (shallow groundwater), Table 4-19 (intermediate groundwater), and Table 4-20 (deep groundwater). The results for the primary contaminants of concern are presented graphically in Figures 4-15 through 4-17.

In general, the results of the January 2000 sampling event in the shallow groundwater were similar to the April 1999 sampling event. The highest concentrations of contaminants in the shallow groundwater were located at the downgradient property line along the north side of the site at Plume Alpha. The newly installed wells at MW-11P and MW-12P helped to better define the extent of Plume Alpha. All results from the January 2000 sampling event for the shallow groundwater were on the same order of magnitude as the April 1999 data; however, the apparent center of Plume Alpha that was detected near MW-5P in the April 1999 sampling event was detected more to the west near MW-10PS during the January 2000 sampling event. Concentrations for the primary compounds of concern decreased in MW-5P from April 1999 to January 2000 while concentrations in MW-10PS increased slightly over the same time interval.

The January 2000 sampling event differed from the April 1999 sampling event with respect to intermediate depth contaminant concentrations. During the April 1999 sampling event, the highest concentrations of the primary VOCs of concern were detected at upgradient monitoring wells along Sea Cliff Avenue at MW-6P and MW-8PI in Plume Beta. However, the January 2000 sampling event indicated lower levels of contaminants at MW-6P (MW-8PI remained similar to previous sampling events) and more elevated levels of chlorinated VOCs further downgradient near wells MW-5PI, MW-10PI, and the newly installed MW-12PI. The highest concentrations of chlorinated VOCs in intermediate groundwater samples during the January 2000 sampling event occurred at MW-12PI and MW-10PI. The presence of 12DCE (82 ug/l at MW-12PI and 350 ug/l at MW-10PI) and vinyl chloride (6 ug/l at MW-12PI and 38 ug/l at MW-10PI) is indicative of an aged plume.

In the deep wells, the concentrations at Plume Beta in the upgradient well at MW-6PD increased an order of magnitude from the prior April 1999 sampling event. In addition, the concentrations at the downgradient deep wells near Plume Alpha also increased significantly (typically an order of magnitude). While the concentrations of contaminants of concern were the greatest at MW-5PD downgradient, the concentrations at MW-6PD (upgradient of MW-5PD) were also significant and on the same order of magnitude for the principal PCE and TCE degradation products, 12DCE and vinyl chloride. The fact that 12DCE and vinyl chloride concentrations were very similar at the upgradient and downgradient wells clearly suggests linkage between the upgradient Plume Beta and the downgradient Plume Alpha. The results for MW-6PD and MW-5PD showing the presence of the primary contaminants of concern at the upgradient and downgradient wells, respectively are summarized below:

MW-6PD (upgradient, Plume Beta):

- PCE: 26 ug/l
- TCE: 490 ug/l
- 12DCE: 1,100 ug/l
- Vinyl Chloride: 250 ug/l

MW-5PD (downgradient, Plume Alpha):

- PCE: 740 ug/l
- TCE: 8,700 ug/l
- 12DCE: 2,100 ug/l
- Vinyl Chloride: 210 ug/l

To obtain a better understanding of contaminant migration over time and to identify the most likely source of contamination at the Pall site, a cross-section of the eastern side of the Pall site where contaminant concentrations have been the greatest was developed. Concentration isopleths for the final degradation products from PCE and TCE (i.e., vinyl chloride and cis-12DCE) were plotted as a function of depth to determine if there is evidence of linkage between present day detections of contaminants and historic, upgradient releases. The resulting figures for 12DCE and vinyl chloride are shown in Figures 4-18 and 4-19, respectively. Figures 4-18 and 4-19 clearly indicate a deep, upgradient source that is significantly aged migrating across the Pall site, and further off-site onto the City of Glen Cove property. When the vertical gradients across the Pall site are considered with respect to the current distribution of contaminants in the aquifer and the confirmation of a deep, upgradient source, it is apparent that Plume Alpha is directly linked to upgradient Plume Beta.

The Phase II RI also evaluated the presence of Freons in the groundwater. The Freons data differed from the other chlorinated VOC data in that upgradient concentrations at Plume Beta were relatively minor compared to downgradient concentrations within Plume Alpha. As indicated in Figure 4-10, the highest levels of Freons were detected at downgradient, shallow wells MW-12PS, MW-10PS, and MW-2A with lower levels also detected at MW-4P. Freons were not detected in shallow, upgradient wells. In the intermediate groundwater, the highest concentrations of Freons were detected in MW-4PI and MW-2A. However, Freon was also detected upgradient at MW-6P and MW-1PI. Freons were detected in several deeper wells, but the levels of Freons present were significantly lower (typically 1 to 2 order of magnitude) than in the shallow and intermediate wells. Freon data is presented for the shallow, intermediate, and deep wells in Tables 4-18, 4-19, and 4-20, respectively, and included graphically in Figures 4-15 through 4-17.

In general, the groundwater investigation phases of the RI indicated that chlorinated VOC compounds including PCE, TCE, 111TCA, 12DCE, and Vinyl Chloride are present in the shallow, intermediate, and deep groundwater zones at concentrations exceeding NYSDEC Class GA Groundwater Quality Standards. The greatest concentrations of contaminants in the shallow zone were detected in Plume Alpha in wells at the downgradient (northern) site property line. The greatest concentrations in the intermediate zone were detected upgradient (Plume Beta) and downgradient (Plume Alpha) during different sampling events. The highest concentrations in deep groundwater were detected downgradient in Plume Alpha in one sampling event. However, similar concentrations were also detected upgradient in certain wells within Plume Beta. The data clearly indicates that Plumes Alpha and Beta are significantly aged as indicated by the presence of vinyl chloride in the majority of samples containing PCE and TCE. When taken as a whole, the collective groundwater data strongly imply that a

historic, upgradient release of contaminants is the primary source of the PCE, TCE, 111TCA, 12DCE, and vinyl chloride contamination underlying the site and that Plume Alpha and Plume Beta are linked.²⁵ With respect to Freons, the data indicate that Freons are present in the shallow and intermediate groundwater at concentrations exceeding principal organic compound (POC), Class GA Groundwater Quality Standards. While exceedances are also present in the deep groundwater, the exceedances are relatively minor (only slightly above POC Class GA Standards). Due to the difference in the contaminant distributions, Freons may serve as a reasonable plume differentiator when evaluating potential upgradient and downgradient sources of contamination in the shallow, intermediate, and deep aquifers because there does not appear to be any linkage between Plume Alpha and Plume Beta with respect to Freons.

4.3 Surface Water Characterization

During the Phase I RI completed by the NYSDEC, a limited surface water sampling program was conducted to obtain surface water quality data from Glen Cove Creek. The data collected is summarized in Table 4-21. Sample SW-1 was located at Glen Cove Creek near Sea Cliff Avenue. Sample SW-2 was collected approximately 250 feet downstream near the entrance to the August Thomsen building. Sample SW-3 was located the furthest downstream near the northwest corner of the August Thomsen property.

As indicated in Table 4-21, the highest concentrations were detected at SW-3 where PCE was detected at 77 ug/l and TCE was detected at 29 ug/l.

²⁵ Although other compounds such as 11DCE, and chloroethane have also been detected on-site, these compounds have typically been detected at lower concentrations than the primary contaminants of concern and are typically associated with the less prevalent degradation pathways for PCE and TCE. Therefore, these contaminants are not listed specifically in summary statements.

5.0 LIMITED OFF-SITE INVESTIGATION

In accordance with a request made by the NYSDEC, Pall initiated a limited off-site investigation consisting of soil and groundwater sampling. This section describes the results of the limited off-site investigation.

5.1 Scope and Limitations

In order to assist the NYSDEC in the overall characterization of the Sea Cliff Avenue Industrial Area, NYSDEC requested that Pall complete a limited off-site investigation on the immediately adjacent properties located south and north of the Pall site. The work completed as part of the off-site investigation included the following:

- Collection of four (4) shallow, soil samples at the City of Glen Cove, Day Care Center property;
- Collection of three (3) soil samples at the City of Glen Cove, EMS Garage Area;
- Installation of five (5) Geoprobe borings and the collection of shallow and intermediate depth, grab, groundwater samples from the City of Glen Cove property;
- Installation of two (2) sets of well triplets (total of 6 wells) on the City of Glen Cove property; and,
- Collection of groundwater quality samples from several off-site monitoring wells located throughout the Sea Cliff Industrial Area.

The locations of the soil samples, Geoprobe borings, and new well installations are identified in Figure 5-1 and 5-2. The regional, off-site wells sampled as part of the RI are indicated in Figure 4-3.

It should be noted that Pall completed this limited off-site investigation solely as requested by the NYSDEC and that the completion of the investigative work is not meant to state or imply that Pall is in any way responsible for any off-site contamination detected or any remedial actions that may be warranted off-site.

5.2 Soil Investigation

The limited off-site soil investigation consisted of two phases. The first phase was limited to the collection of four (4), shallow soil samples within the property of the City of Glen Cove Day Care Center. The second phase focused on the area directly north of the City of Glen Cove EMS Garage where a slight sheen was evident during collection of Geoprobe, grab,

groundwater samples. The soil sample locations are indicated in Figure 5-1 and data from the soil investigation is summarized in Table 5-1. As indicated in Table 5-1, all parameters were either non-detectable or detected at concentrations significantly below their respective RSCOs.

It should be noted that low level, chlorinated VOC impacts were detected in all soil samples. This is consistent with the soil data on the Pall / August Thomsen site and supports the possibility that flooding of Glen Cove Creek and the rising of the water table during flooding events may have been the source of shallow soil contamination throughout the area.

5.3 Groundwater Investigation

The off-site groundwater investigation consisted of three tasks; groundwater screening with Geoprobe groundwater sampling, installation of new well clusters and sampling at the City of Glen Cove property immediately north of the Pall / August Thomsen site, and regional groundwater quality sampling at wells located throughout the Sea Cliff Industrial Area. The off-site groundwater sampling locations at the City of Glen Cove properties are indicated in Figure 5-2. The regional groundwater monitoring wells that were sampled are indicated in Figure 4-3.

The groundwater screening program consisted of five (5) Geoprobe sampling locations. Samples were collected from each Geoprobe location at the shallow water table (about 10' bgs) and at the intermediate water table (at about 55' bgs). Sample results for the groundwater screening work are provided in Table 5-2. Class GA Groundwater Quality Standards were exceeded in all five boring locations in both the shallow and intermediate sample depths. The contaminants exceeding their respective Class GA Groundwater Quality Standards included PCE, TCE, 1,2DCE, Vinyl Chloride, 1,1DCE, 1,1 DCA, and BTEX. The highest levels of contaminants were detected at Plume Gamma in GP-41 (located near the EMS garage) where 1,600 ug/l of TCE was detected in the 55' deep sample. Elevated BTEX readings (approximately 4,600 ug/l total BTEX) were also detected in the shallow groundwater at GP-41. However, as was discussed in Section 4, the use of Geoprobe installations for the collection of analytical groundwater data should be treated cautiously.

In order to verify the absence or presence of contamination on the City of Glen Cove property, two cluster well triplets were installed. The first cluster (MW-1GS, - 1GI, and -1GD) was installed near GP-44 and GP-45. The second cluster (MW-2GS, - 2GI, and -2GD) was installed near GP-41. These new wells were sampled during the January 2000 sampling event. The results of the January 2000 off-site well sampling are presented in Table 5-3. As previously mentioned, the City of Glen Cove was performing a pumping test at the Carney Street Well No. 21 during part of the January 2000 sampling event. Data collected during this event should be

interpreted cautiously because the impact of the Carney Street pumping on the overall data set is difficult to interpret.

When the data in Table 5-3 is reviewed in conjunction with the on-site groundwater quality data collected in January 2000, it is apparent that Plume Alpha is currently centered near MW-5P and MW-10P.

The concentrations in the shallow, intermediate, and deep wells on the City of Glen Cove property located about 200 to 300 feet downgradient of the MW-5P, MW-10P, and MW-2A clusters are generally lower than the concentrations in the well clusters at the property line, indicating that the horizontal extent of the most elevated contaminant concentrations in the groundwater at Plume Alpha and Plume Gamma have been defined. Based upon the available data, it is possible that Plume Alpha and Plume Gamma may be a common plume (i.e., part of a much larger plume linking Plume Alpha, Plume Beta, and Plume Gamma).

At the request of the NYSDEC, two rounds of regional well sampling were performed on select, off-site wells. During the first sampling event conducted in April/May 1999, regional monitoring wells GC-2S, GC-2D, GC-3S, GC-3M, GC-3D, GC-5S, and GC-5D were sampled. See Figure 4-3 for the locations of the regional well network. The results of this sampling event are summarized in Table 5-4. The data of Table 5-4 indicates that the eastern extent of Plume Alpha (or the combined Plume Alpha, Plume Beta, and Plume Gamma) is roughly bounded by the GC-2 well cluster where concentrations of chlorinated VOCs were all within Class GA Groundwater Quality Standards. The leading edge of the plume(s) in the northern direction was determined to be somewhere near the GC-5 well cluster because contaminant concentrations in GC-5S and GC-5D were relatively low:

GC-5S Summary:

- PCE: 33 ug/l
- TCE: 7 ug/l
- 12DCE: 8 ug/l
- Vinyl Chloride: <10 ug/l

GC-5D Summary:

- PCE: 2 ug/l
- TCE: 15 ug/l
- 12DCE: 14 ug/l
- Vinyl Chloride: <10 ug/l

At the GC-3 well cluster, contaminant concentrations were still relatively high in the shallow groundwater with PCE and TCE concentrations of 340 and 150 ug/l, respectively detected at GC-3S. However, the deeper wells at GC-3M and GC-3D did not contain any parameters above their respective Class GA Groundwater Quality Standards, indicating that the horizontal extent of the deeper Plume Alpha (or the combined Plume Alpha, Plume Beta, and Plume Gamma) likely does not extend beyond the GC-3 well cluster.

A second round of regional monitoring well sampling was conducted on wells GC-5S, GC-5D, GC-8S, GC-8D, and GC-9S in January 2000 at the same time as the on-site well sampling event. The data from the January 2000, off-site well sampling event is presented in Table 5-5. Results at the GC-5 well cluster during the January 2000 sampling event were basically similar to the results obtained during the April / May 1999 sampling event indicating that the northwest leading edge of Plume Alpha (or the combined Plume Alpha, Plume Beta, and Plume Gamma) is near GC-5S and GC-5D. However, the results obtained at GC-9S were slightly higher than at GC-5S indicating that additional off-site study east of GC-9S may be necessary to determine the northeastern leading edge of the plume(s). Results for all parameters in GC-8S and GC-8D were at or near the detection limit further defining the western edge of the off-site plume(s).

6.0 CONTAMINANT FATE AND TRANSPORT EVALUATION

A contaminant fate and transport evaluation was completed to develop a better understanding of the relationship between the source of contaminants, the current locations of plumes, and the most-likely future locations of contaminants. This evaluation considered historical and current source areas, and included the completion of a preliminary groundwater flow and contaminant fate and transport model of the Sea Cliff Industrial Area.

Based upon the results of this RI, there were no apparent sources of chlorinated VOCs²⁶ on the Pall site. Only three soil samples out of over 70 collected at the Pall site contained chlorinated VOCs at concentrations exceeding their respective RSCOs (SB-5 contained 1.0 mg/kg of 12DCE, SB-7 contained 0.4 mg/kg of 12DCE, and 5-SB-15 contained 4.1 mg/kg of 12 DCE and 950 mg/kg of PCE). However, the areal and depth extents of impacts were very limited and monitoring wells located immediately downgradient (MW-4P cluster) were not significantly impacted relative to other wells at the site. Therefore, on-site soil contamination is not significant enough to account for the extent of on-site groundwater contamination. There were no exceedances of RSCOs for the primary contaminants of concern in any other soil samples collected throughout the site.

What about SB-15 0-4ft

In the absence of a viable source of chlorinated organics on-site, alternative explanations for the present state of groundwater contamination at the site were evaluated in detail. This section of the RI documents this evaluation.

6.1 Contaminant Transport and Transformation Mechanisms

The transport of chemicals in the subsurface occurs in the pore spaces of the soil and generally occurs in one of three phases:

- As the movement of chemical in a pure liquid form (i.e., as a separate phase);
- As a chemical dissolved in flowing groundwater; and,
- As a volatilized chemical that becomes mobile as a vapor in the pore spaces.

²⁶ As discussed previously in the text, chlorinated VOCs are defined as PCE, TCE, and their respective degradation products in the context of this report. Freons, although technically chlorinated VOCs, are addressed independently.

Since separate phase, non-aqueous liquids have not been detected in any studies throughout the Sea Cliff Industrial Area and the vapor migration is not a significant migration pathway at the site, the primary mechanism for contaminant fate and transport is the migration of dissolved chemicals in flowing groundwater. Dissolved phase migration of organics (including the primary contaminants of concern at the site) is driven by four principal mechanisms: advection, dispersion, adsorption, and diffusion.

Advection is the dominant factor responsible for dissolved phase movement in the subsurface. The dissolved constituent is transported because the groundwater in which it is dissolved is moving. Since groundwater generally moves from high water table elevations to low water table elevations, dissolved phase contaminants will move the same general direction. At the Sea Cliff Industrial Area, groundwater typically flows from the south-southeast toward the northwest (see Figures 4-4 through 4-10). Therefore, any contaminants present south of Sea Cliff Avenue will migrate across the Pall site from the south property line toward the north property line and subsequently toward the Carney Street Well Field property. The rate at which contaminant migration via advection will occur is the result of several factors including the hydraulic gradient (i.e., the slope of the water table), the permeability of the subsurface materials (i.e., the hydraulic conductivity), and the effective porosity (i.e., a measure of the pore spaces between soil that is available for mass transport). These factors are critical in understanding the migration of contaminant plumes from a source area over time.

Dispersion is the spreading of contaminants away from the axis of groundwater flow that would be predicted by advection alone. Dissolved compounds spread as they move in groundwater because of variations in groundwater velocity within the subsurface resulting from heterogeneities in subsurface materials. Dispersion during transport results in dilution of contaminant pulses and attenuation of contaminant peaks. However, this same transport process also causes contaminants to be found at increased distances from the predicted linear path resulting from advective transport alone. At the Pall site, dispersion is one of the primary reasons why contaminants near the downgradient property line cover a larger area than would be predicted solely by analyzing the potentiometric surface maps of figures 4-4 through 4-10.

Adsorption differs from the other transport processes in that it retards contaminant migration in the subsurface rather than enhances it. Most dissolved chemicals interact with subsurface materials (i.e., soils). These interactions cause a decrease in contaminant velocities with respect to the groundwater velocity. The primary material onto which dissolved phase contaminants will adsorb is the organic matter present in the subsurface. Subsurface materials with relatively high organic carbon concentrations will tend to promote adsorption and retarding of contaminant migration whereas subsurface materials with relatively low total

organic carbon concentrations will tend to minimize adsorption and allow transport more effectively. At the Pall site, TOC data (see Table 4-4) indicates that the organic carbon content over the majority of the site was relatively low so that transport of dissolved contaminants in groundwater would not be retarded as significantly as some other sites where organic carbon levels are higher. This conclusion is supported by the widespread nature of the plume(s) originating south of Sea Cliff Avenue.

The fourth major transport process, molecular diffusion, is the migration of contaminants caused by concentration gradients (i.e., contaminants will move from higher concentrations to lower concentration). At the Pall site, as well as at most sites, molecular diffusion is typically an insignificant transport process relative to advection, dispersion, and adsorption processes because the rate at which molecular diffusion occurs is significantly slower than with the other processes. Molecular diffusion was therefore not considered further in the contaminant fate and transport evaluation.

In the Sea Cliff Industrial Area, there have historically been very complex networks of supply and diffusion wells on the Pall, Photocircuits, 45A, and municipal well field properties. Because of these wells, the advective transport of contaminants was significantly altered by pumping cycles and the locations and depths of pumping and diffusion wells. Preliminary groundwater modeling using MODFLOW has indicated that the historic network of supply and diffusion wells in the area caused contaminants in the shallow groundwater to be drawn downward at rates that were significantly greater than would be expected by the vertical gradients during non-pumping periods indicated in Figure 4-10. For this reason, much of the contamination originating south of Sea Cliff Avenue would be present at depth near the source areas and further downgradient across the Pall property as was confirmed by the most recent site data.

The ultimate extent of migration of dissolved-phase solvents is governed by several factors. The maximum extent of plume migration is reached when these factors in the groundwater/aquifer-material/dissolved-phase solvent system reach equilibrium. At equilibrium, the configuration of the plume could be very different at downgradient receptors depending upon the type of release(s). The three most common types of releases governing plume migration in the dissolved phase are:

- A constant source release (e.g., the release of chlorinated organics into the diffusion wells while they were operational),
- An initial high concentration release with source concentrations declining over time (e.g., the documented tank release upgradient, the concentrations of

contaminants in groundwater near Photocircuits well MW-7 before chlorinated compounds were phased out, the possible UST release(s) at 45A that were later ceased, etc.), and

- Pulsed releases that continue over an extended period. Based upon the data available regarding sources at the Photocircuits and 45A sites, the releases that have been documented²⁸ consist primarily of constant source releases and initial releases with decreasing concentrations over time. Pulsed type releases have not been documented²⁹.

If a constant source of dissolved chemical were available, dispersion, degradation, volatilization, and sorption would cause a plume of dissolved constituents to approach equilibrium at some point in time, if not intercepted by a pumping well or surface water body. Under such equilibrium, or steady state conditions, the concentration of dissolved chemical at any location in the plume would remain relatively constant at concentrations similar to source area concentrations. The outer boundaries of the dissolved plume typically would be defined by lower concentrations than the center of the plume due to dispersion. Although there have been documented, constant source type releases south of Sea Cliff Avenue in the diffusion wells, the constant source, discharged concentrations that have been documented upgradient were relatively low so that the current plume configuration is more likely the result of decreasing source concentrations over time as opposed to constant source loads.

Under the decreasing source concentration scenario, the quantity of chemical in the source area will gradually decline, once equilibrium between chemical phases is reached in the source area. This decline in concentrations will occur because of migration of chemical through groundwater, volatilization, dispersion, and degradation. Given sufficient time, the rate of chemical movement from the source area into the groundwater will decline resulting in concentrations decreasing in the plume and the slow decrease of the size of the plume (after the initial increase caused by dispersion). Once the rate of attenuation exceeds the rate of mass loading, a plume will typically 'hollow out' before declining. Higher concentrations located near the source, which are essentially the source areas for more downgradient locations of the plume, will decline first. Once these source areas have been reduced to levels that can no longer supply mass in excess of the downgradient attenuation rates, the plume will begin to

²⁸ It should be noted that there have been no documented releases of chlorinated VOCs on the Pall site and soil data has only indicated one small location out of over 70 samples that exceeded RSCOs. For this reason, only historic off-site sources are discussed as "documented" sources because there have been actual witnessed and reported releases.

²⁹ Although there have been several different releases over time at the upgradient properties, these releases are not being treated as pulsed releases, but rather multiple, independent releases for the purposes of the contaminant migration discussion.

recede. In general, the current configuration of the plumes migrating across the Pall property in the Sea Cliff Industrial Area are consistent with theoretical plume migration scenarios for upgradient sources with initial high mass loads that have decreased over time.

6.2 Groundwater Modeling³⁰

A groundwater flow and contaminant fate and transport model was developed to obtain a better understanding of contaminant migration from identified source areas. The model development is discussed in Appendix G and the results of modeling are presented in this section.

6.2.1 Groundwater Flow Model Results

In general, the groundwater flow model was calibrated successfully and predictions of the groundwater flow direction under non-pumping scenarios were calibrated to recent groundwater elevation data. The water table simulated for 1999 represents a steady-state, unstressed water table (i.e., the condition which prevails in the absence of pumping). This water table configuration correlates well to that observed during recent studies. The unstressed, modeled and observed groundwater flow is generally to the northwest, although flow over portions of the site in Layer 1 is towards Glen Cove Creek. The gradient across the site is approximately 0.0037 feet per foot in Layers 2 through 4 and approximately 0.0043 feet per foot in Layer 1 (see Appendix G). These gradients and flow patterns generally agree with site data.

After calibrating the unstressed (non-pumping) flow model, the supply and diffusion well networks that were historically operated at the Sea Cliff Industrial Area were "turned on" in the model to simulate groundwater potentiometric surfaces and flow patterns during historic pumping periods from the 1960's through about 1992.

The modeled potentiometric surface during pumping periods indicates that localized vertical gradients existed in the study area and that the model with pumping is generally consistent with actual observations (e.g., the 1990 study)³¹. This confirms that historic upgradient releases

³⁰ The information presented in this section and in appendix G is for discussion purposes only to provide a better understanding of the general nature of contaminant migration in the Sea Cliff Industrial Area. The conceptual model discussed is subject to change (i.e., assumed input parameters and model setup may be altered to better calibrate the model) and the conclusions and results of the modeling presented herein may change accordingly.

³¹ It should be noted that the model contains some uncertainty with respect to the early, historic pumping scenarios (pre-1977) because of the lack of site-specific, vertical hydraulic conductivity data and calibration target data while the Carney Street well was active. However, the results obtained from the flow modeling are generally consistent with the available, observed data and our experience at other sites with similar pumping conditions, and

would migrate downward resulting in impacts to the deeper aquifer as is currently observed at the Pall site and further downgradient at the Carney Street Well Field site. Because the groundwater flow model accurately simulates groundwater flow at the Sea Cliff Industrial Area site, it is believed that the existing MODFLOW simulation is sufficient to allow reasonable modeling of contaminant fate and transport at the site.

6.2.2 Contaminant Transport Model Results

The results of contaminant transport modeling were evaluated both qualitatively and quantitatively. Qualitatively, the MT3D simulations confirmed that upgradient releases from documented source areas would migrate toward and across the Pall property, and further downgradient to the Carney Street Well Field site. The modeling confirmed that detections of the primary contaminants of concern in downgradient, municipal supply wells are possible, and likely, without any sources of the contaminants of concern on the Pall site. The direction of contaminant transport is generally toward the northwest and is consistent with actual observations of the contaminant plume(s) over time. The model also determined that the supply and diffusion well network that was operated historically in the area would serve to "drag" contaminants vertically downward resulting in contamination at depth near source areas upgradient of Sea Cliff Avenue, as well as downgradient on the Pall and City of Glen Cove properties. In general, the qualitative evaluation of the contaminant transport simulations indicated that model results were consistent with historic and current field observations.

Quantitatively, several source strengths were tested in MT3D for the two sources considered in the model. The results from the modeling simulation accurately predicted concentrations at certain downgradient monitoring and some modeled source locations. Thus, in general, the quantitative analysis of preliminary contaminant transport modeling results indicates that the preliminary model accurately predicts long-term downgradient concentrations (i.e., at the Carney Street Well Field property and near MW-5P at the Pall site). However, additional simulations are required to more accurately predict upgradient source area concentrations of contaminants over time. This suggests that additional simulations including degradation of PCE in the model or the inclusion of other chlorinated organics in the source area may yield better, quantitative, calibration data.

It is believed that additional modeling with varying PCE degradation rates in the source area will improve upgradient model calibration without adversely impacting downgradient modeling

are considered a reliable prediction of the likely flow patterns during the period from 1977 through the present time.

accuracy because of the nature of first order decay algorithms. In addition, it should be noted that recent sampling upgradient has indicated chlorinated VOC levels (not associated with the PCE degradation pathway) higher than those incorporated in to the model for the purpose of model verification. Additional modeling using chlorinated sources other than PCE (e.g., 111TCA, etc.) may yield better predictions of present day, upgradient contaminant concentrations.

7.0 CONCLUSIONS

Based upon the data collected during the RI and the thorough review of historical site and off-site data, several conclusions can be made regarding the nature and extent of contamination at the Pall / August Thomsen site.

- AOC #1 was confirmed as the apparent center of elevated VOCs in shallow groundwater. The "center" of Plume Alpha is currently near MW-5P as determined through sampling the cluster wells at MW-5P, MW-10P, MW-2A, MW-11P, MW-12P, MW-1G, and MW-2G. The depth of Plume Alpha in this "center" area is at least 100 feet below the water table. Based upon review of three-dimensional groundwater fate and transport pathways and the presence of PCE and TCE daughter products (12DCE and Vinyl Chloride) at elevated concentrations both upgradient and downgradient in intermediate and deep groundwater monitoring wells, it is very probable that the source of Plume Alpha was a historic, upgradient release (i.e., Plume Beta and Plume Alpha are a common, linked plume). This position is supported by the absence of soil contamination significant enough to have resulted in the extent of on-site groundwater impacts (i.e., only 3 out of over 70 samples exceeded RSCOs); the confirmed groundwater flow direction from south toward the northwest; elevated concentrations of chlorinated VOCs in upgradient (south) monitoring wells with increasing concentrations at depth; evidence of significant PCE and TCE degradation over time; and, the results of preliminary groundwater modeling.
- The northwest leading edge of Plume Alpha (or the combination of Plumes Alpha, Beta, and Gamma), currently centered near MW-5P, is likely near the GC-5 well cluster based upon regional groundwater monitoring data. The eastern extent of the plume appears bounded by the GC-2 well cluster and the western extent of the plume appears to be bounded by the GC-8 well cluster. Deep wells screened approximately 150 to 175 feet below the water table near GC-5, GC-8, and GC-9 indicate that the depth of the leading edge of the plume is at least 175 feet below the water table.
- Soil data at AOC #2 indicates the absence of any significant soil contamination. Groundwater underlying this area is similar in nature to Plume Alpha and may be either part of Plume Alpha (and hence, part of upgradient Plume Beta) or a separate Plume Gamma that is present near the MW-2G cluster. Freons were also detected in shallow and intermediate groundwater in this area at concentrations exceeding the Class GA Groundwater Quality Standard for POCs. Since upgradient concentrations of Freons were either non-detectable or only slightly above detection limits, AOC # 2 is considered a possible Freon source area.
- An extensive soil investigation at AOC #3 indicated the absence of any significant VOC contamination. Parameters were not detected at concentrations

exceeding their respective RSCOs in AOC #3 and no further action is recommended for this area.

- The soil and groundwater investigation at AOC #4, the drum storage area, indicated no significant soil contamination above RSCOs. However, Freons were detected in shallow and intermediate groundwater at concentrations exceeding Class GA Groundwater Quality Standards for POCs. Additional soil delineation south of AOC #4 is proposed during a forthcoming pilot test program at AOC #5. The extent of Freon contamination in groundwater has been fully delineated.
- An extensive investigation at AOC #5 indicated only one sample location where PCE in soils exceeded the RSCO. A pilot test program has been proposed for this single area. Additional soil sampling will be completed as part of the pilot test program to confirm the extent of the RSCO exceedances. Groundwater underlying this area was not impacted at levels higher than the concentrations of contaminants migrating onto the site from upgradient based upon data from MW-3P and MW-4P data.
- The installation of shallow, intermediate, and deep groundwater monitoring wells at AOC #6 revealed intermediate and deep contamination of the aquifer at Plume Beta resulting from an apparent upgradient source of PCE, TCE and /or their daughter products (primarily 12DCE and Vinyl Chloride). When the data from Plume Beta wells is coupled with the results of the fate and transport evaluation and preliminary modeling, there is a very high probability that downgradient Plume Alpha (currently centered at MW-5P and MW-10P) and downgradient Plume Gamma (currently centered near MW-2G) are directly related to upgradient Plume Beta.

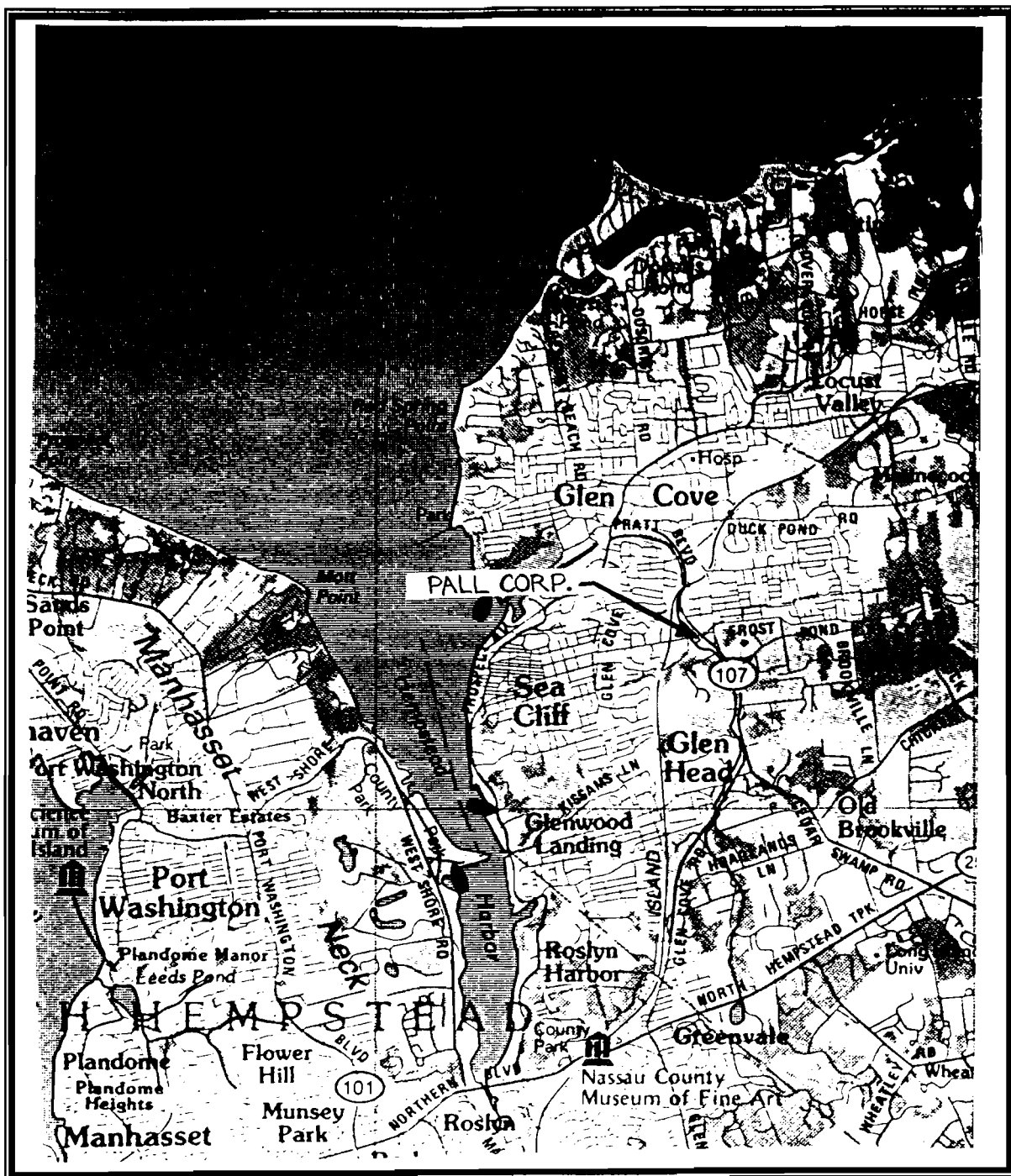
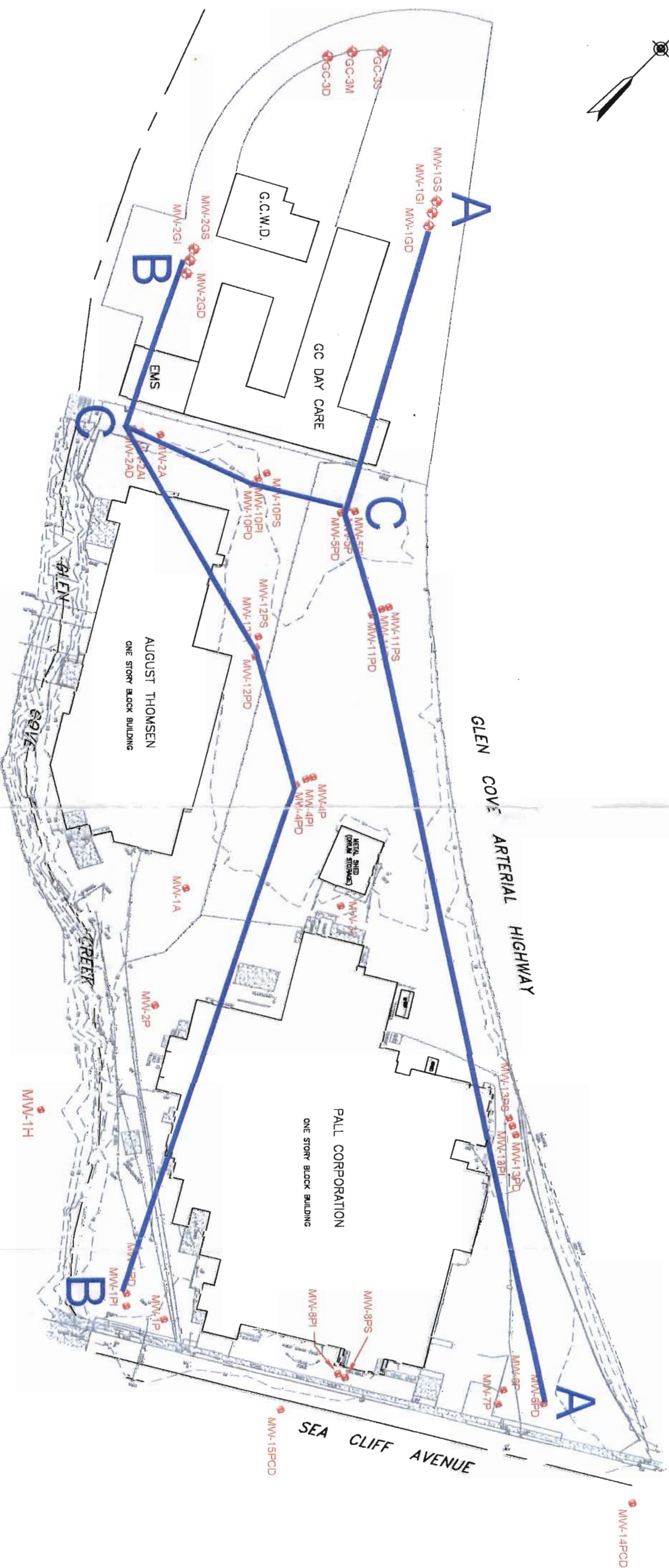


Figure 1-1
Location Map
(Approximate Scale: 1" = 5 Miles)



GRAPHIC SCALE

0 40 80

1" = 80'-0" (Approximate)

FIGURE:
2-1

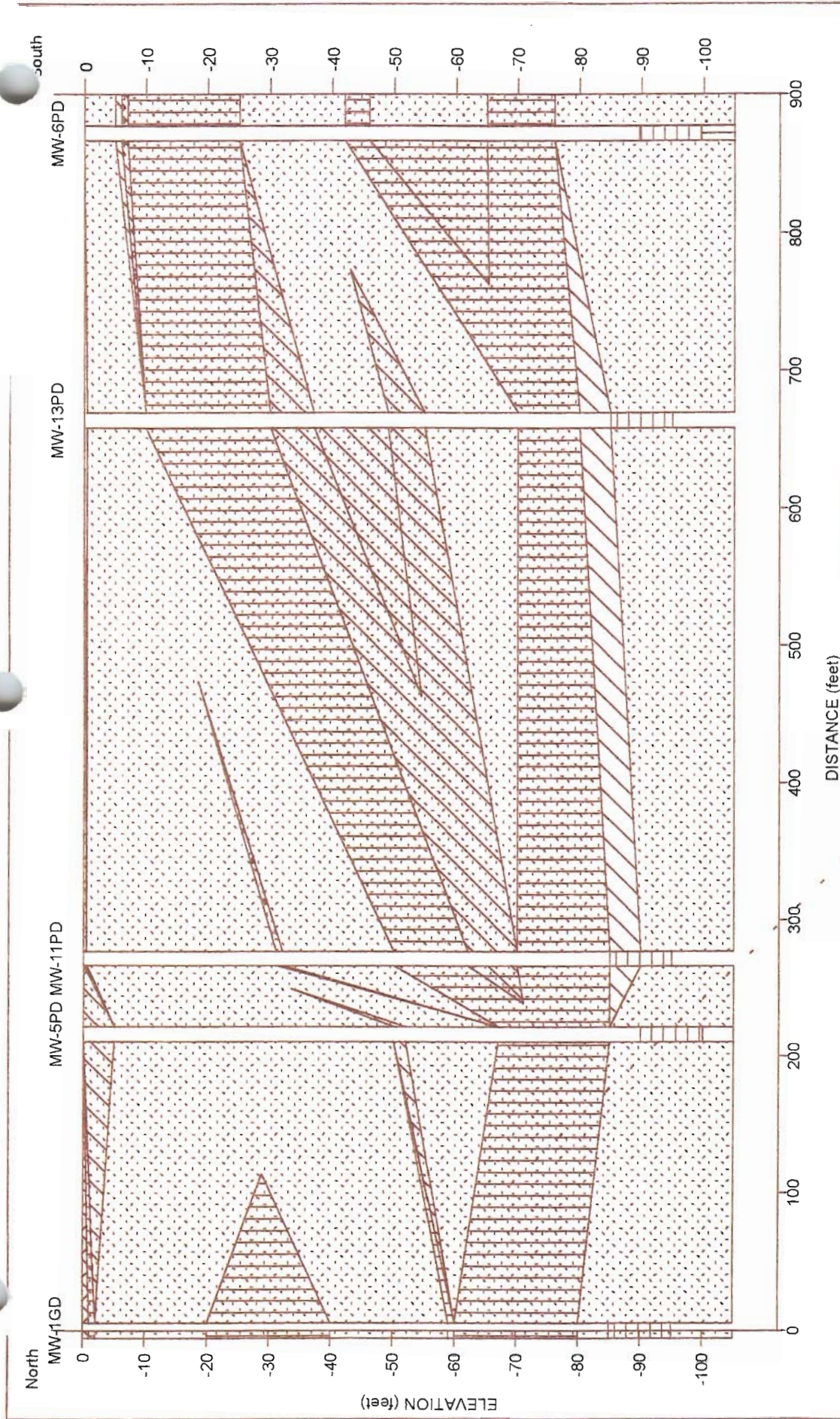


FIGURE-2-2

GEOLOGIC CROSS SECTION
 Section North-South
 Site Specific Cross-Section A-A'

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 30 Sea Cliff Avenue
 Glen Cove, New York

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 Patchogue, New York 11772
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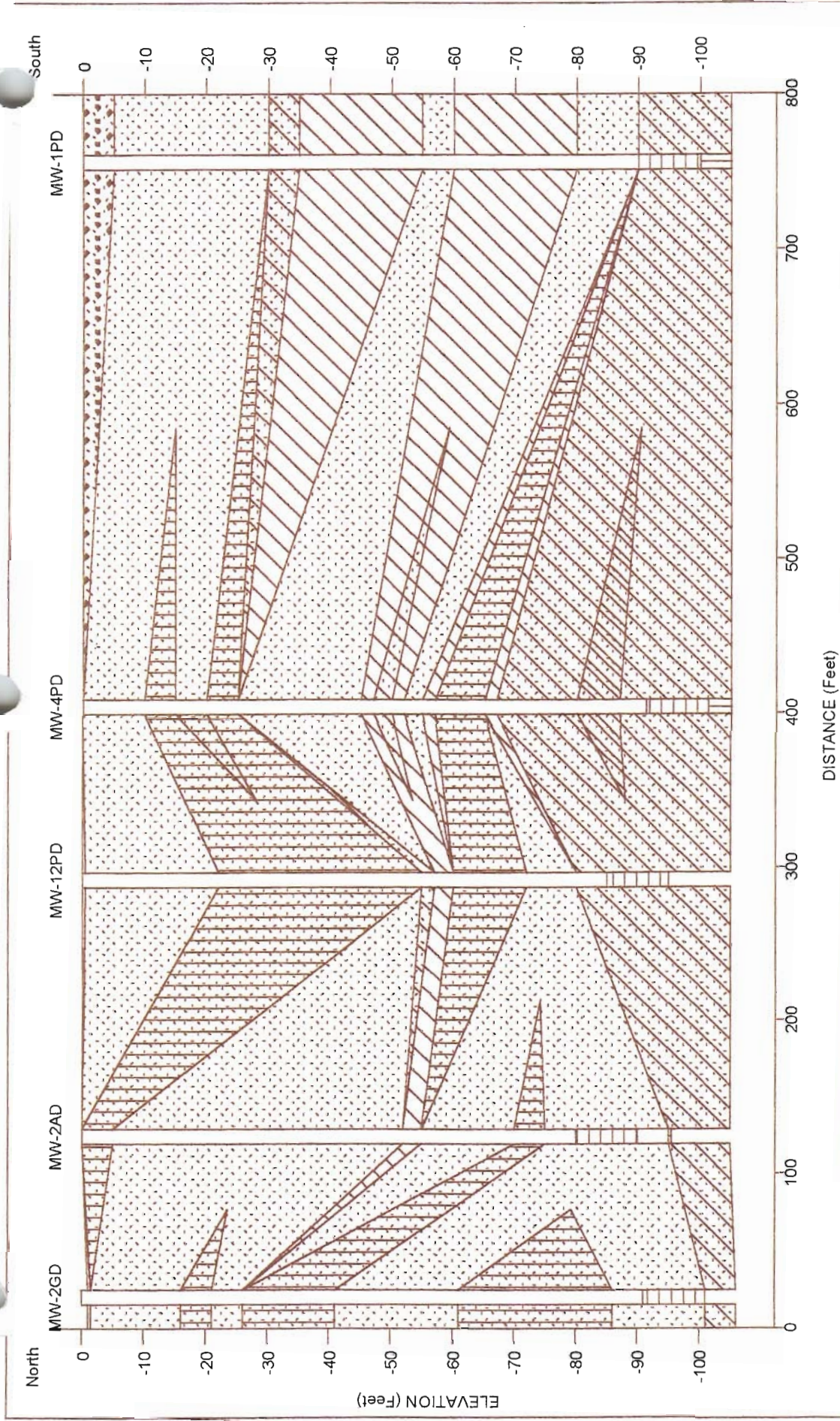
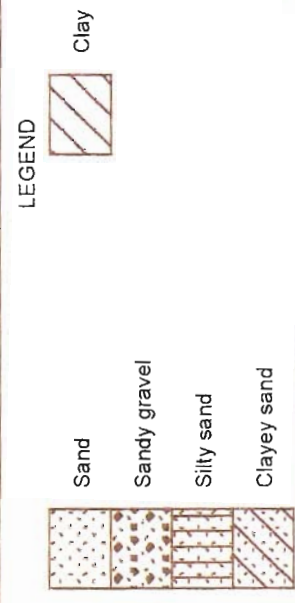


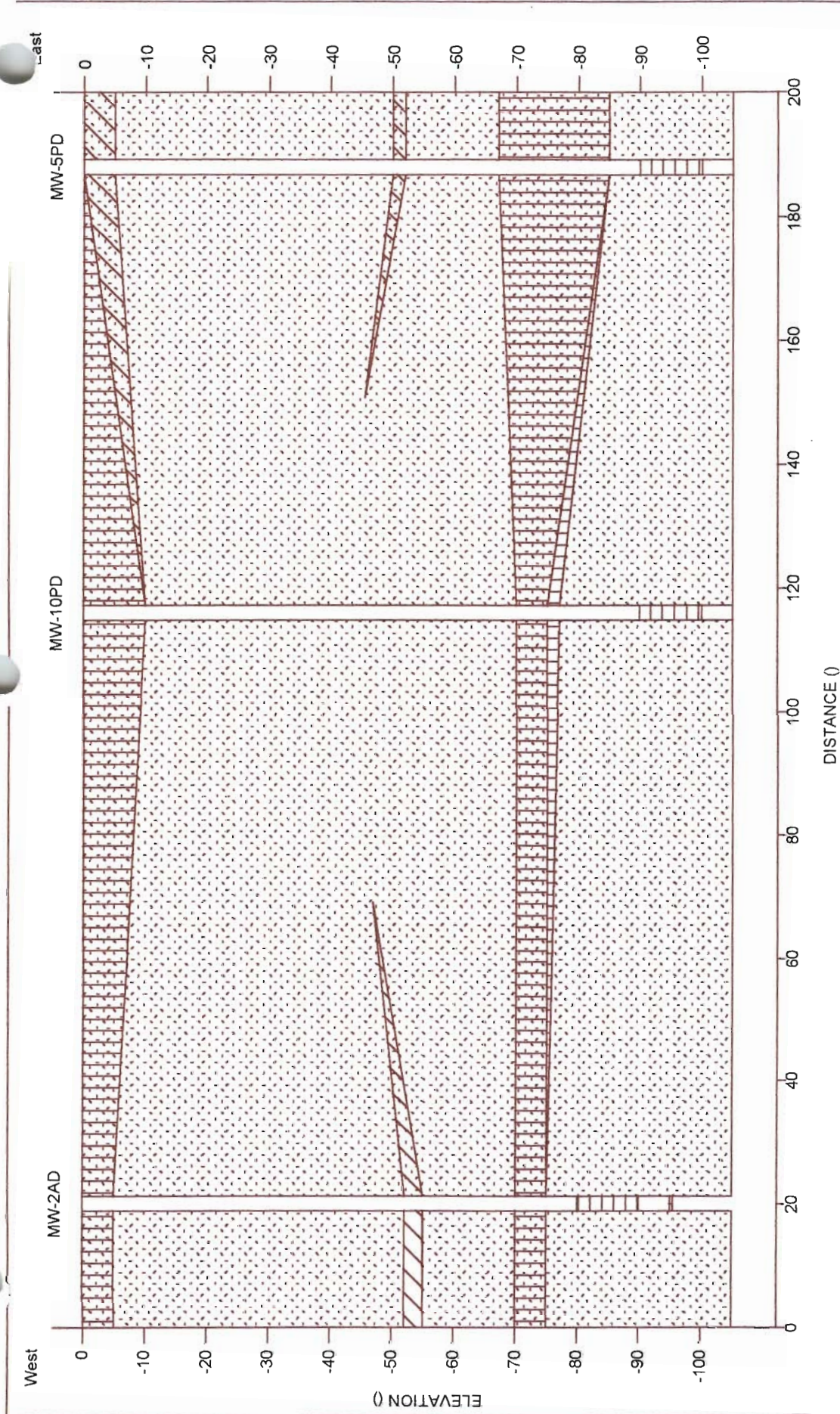
FIGURE 2-3

GEOLOGIC CROSS SECTION
 Section North-South
 Site Specific Cross-Section B-B'

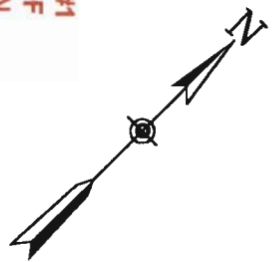
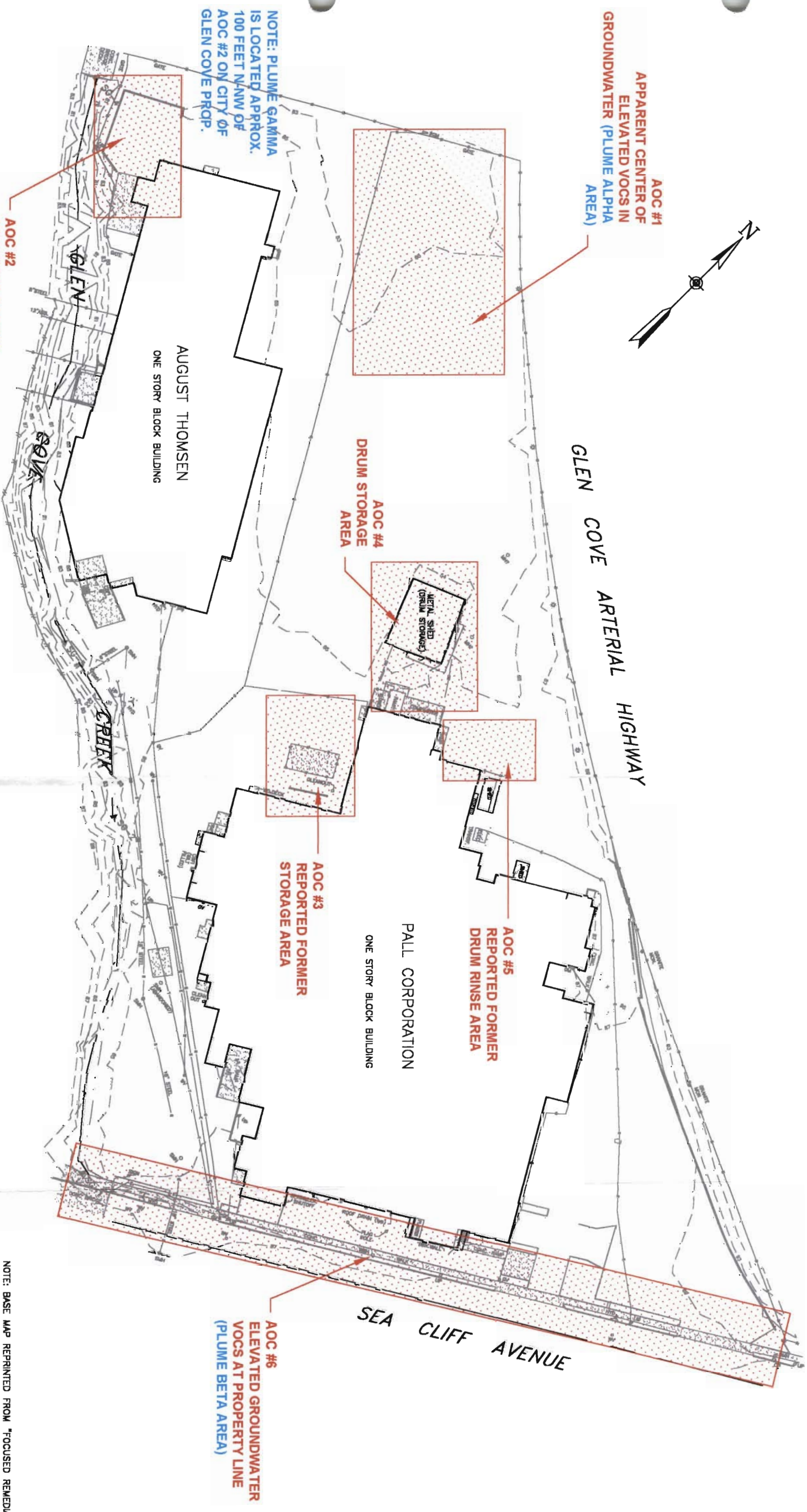
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 Glen Cove, New York

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 312 East Main Street
 Patchogue, New York 11772
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<p>Pall Corporation 30 Sea Cliff Avenue Glen Cove, New York</p>	<p>FIGURE 2-4</p>	<p>LEGEND</p> <ul style="list-style-type: none"> Sand/Gravelly Sand Silty sand Clay Sandy clay
<p>GEOLOGIC CROSS SECTION Section West-East Site Specific Cross-Section C-C'</p>		<p>ENVIRO-SCIENCES, INC. 312 East Main Street Patchogue, New York 11772 (631) 207-9005, Fax (631) 207-3614</p>



NOTE: PLUME GAMMA IS LOCATED APPROX. 100 FEET N-NW OF AOC #2 ON CITY OF GLEN COVE PRCP.

AOC #2
REPORTED FORMER
PCE TANK STORAGE

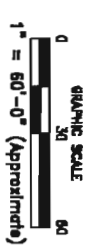
AOC #4
DRUM STORAGE
AREA

AOC #3
REPORTED FORMER
STORAGE AREA

AOC #5
REPORTED FORMER
DRUM RINSE AREA

AOC #6
ELEVATED GROUNDWATER
VOCs AT PROPERTY LINE
(PLUME BETA AREA)

NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/99



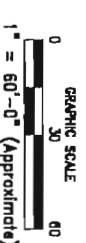
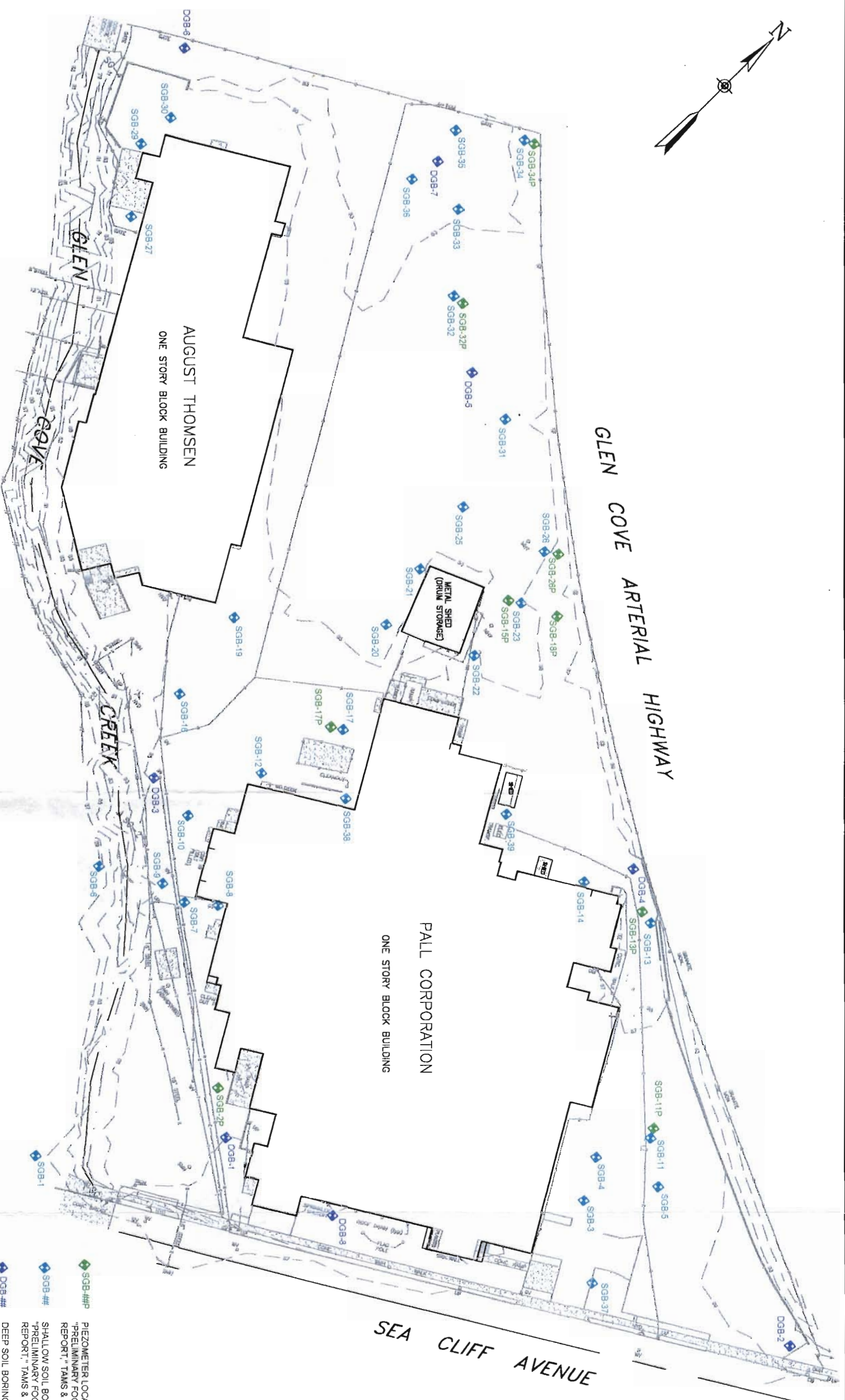
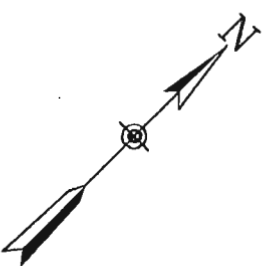
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Areas of Possible Concern
Investigated During RI

DATE:	3/12/00	DRAWN:	DJS
REV. NO.	1	DESIGNED:	DJS
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE3-1.DWG

FIGURE:
3-1



- SGB ###
PIEZOMETER LOCATION AS DEFINED IN
"PRELIMINARY FOCUSED REMEDIAL INVESTIGATION
REPORT," TAMS & GZA, 4/99.
- SGB ##
SHALLOW SOIL BORING LOCATION AS DEFINED IN
"PRELIMINARY FOCUSED REMEDIAL INVESTIGATION
REPORT," TAMS & GZA, 4/99.
- DGB ##
DEEP SOIL BORING LOCATION AS DEFINED IN
"PRELIMINARY FOCUSED REMEDIAL INVESTIGATION
REPORT," TAMS & GZA, 4/99.

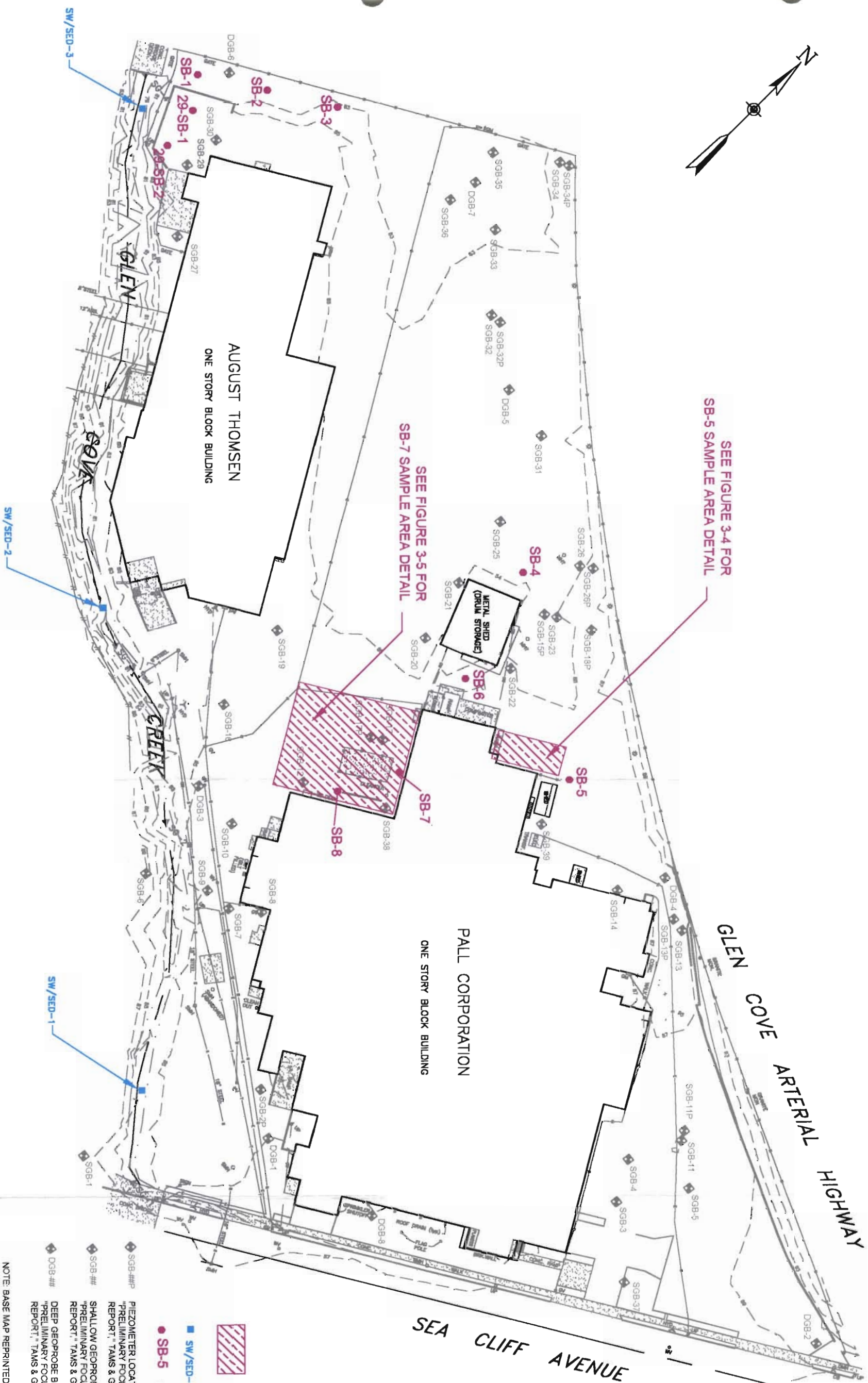
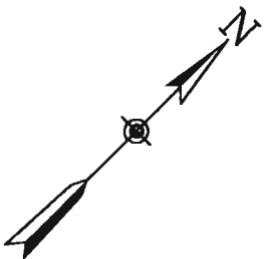
NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL
INVESTIGATION REPORT," TAMS & GZA, 4/99

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NYSDEC Phase I Remedial
Investigation Soil Boring Locations

DATE:	3/12/00	DRAWN:	DJS	FIGURE:
REV. NO.	1	DESIGNED:	DJS	
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE3-2.DWG	3-2



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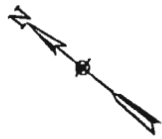
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Glen Cove, New York 11542

Phase II Remedial Investigation Soil
Boring Locations
(On-Site Investigation)

DATE: 3/12/00
REV. NO. 1
PROJECT NO. MT&E-PALL-M371

DRAWN: DJS
DESIGNED: DJS
FILE: FIGURE3-3.DWG

FIGURE:
3-3



5-SB-15 5-SB-12 5-SB-9 5-SB-6 5-SB-1

5-SB-14 5-SB-11 5-SB-8 5-SB-5 5-SB-2

5-SB-13 5-SB-10 5-SB-7 5-SB-4 5-SB-3

PALL CORPORATION
BUILDING (NORTH EXTERIOR
WALL)

TEMP. STORAGE SHED

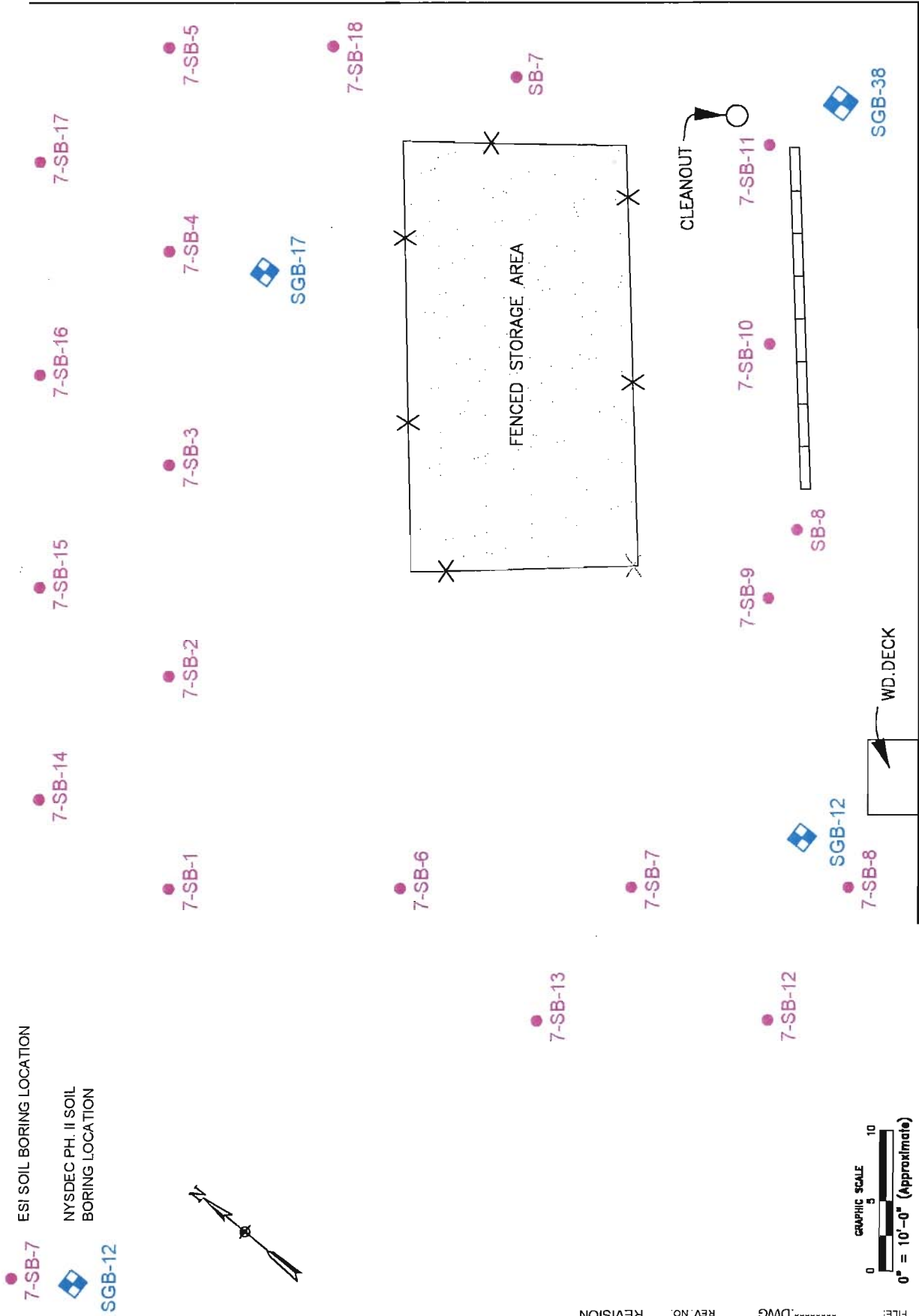
GRAPHIC SCALE
0 2.5 5
1" = 5'-0" (approximate)

SOIL BORING LOCATION

5-SB-##

ENVIRO-SCIENCES, INC.
312 EAST MAIN STREET
PATCHOGUE, NEW YORK 11772
PHONE: 516-207-9005 FAX: 516-207-3614

Pall Corporation Glen Cove, NY		SB-5 Area Soil Investigation Sample Locations	DATE: 03/13/00	DRAWN: DJS	DESIGNED: DJS	PROJECT NO. MT&E-PALL-M371	FIGURE: 3-4
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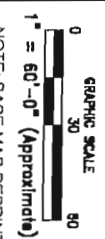


<p>ENVIRO-SCIENCES, INC. 312 EAST MAIN STREET PATCHOGUE, NEW YORK 11772 PHONE: 516-207-9005 FAX: 516-207-3614</p>	<p>Pall Corporation Glen Cove, NY</p>	<p>SB-7 Area Soil Investigation Sample Locations</p>	<p>DATE: 03/13/00 DRAWN: DJS DESIGNED: DJS</p>	<p>PROJECT NO. MT&E-PALL-M371</p>	<p>FIGURE 3-5</p>
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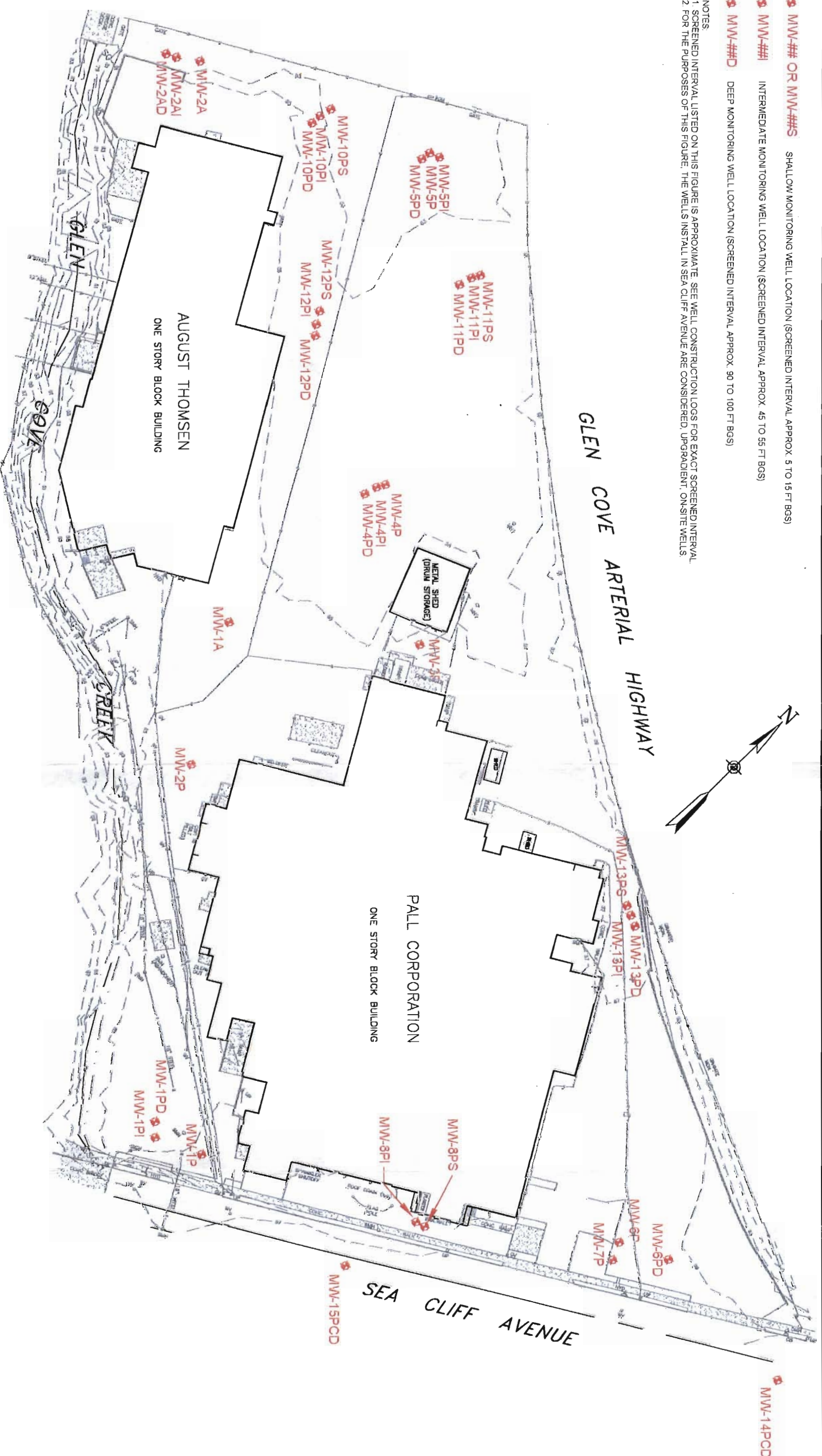
FILE: *****.DWG
REVISION
REV. NO.

- ❖ MW-## OR MW-##S SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 5 TO 15 FT BGS)
- ❖ MW-##I INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- ❖ MW-##D DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALL IN SEA CLIFF AVENUE ARE CONSIDERED, UPGRADIENT, ON-SITE WELLS.



NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/89

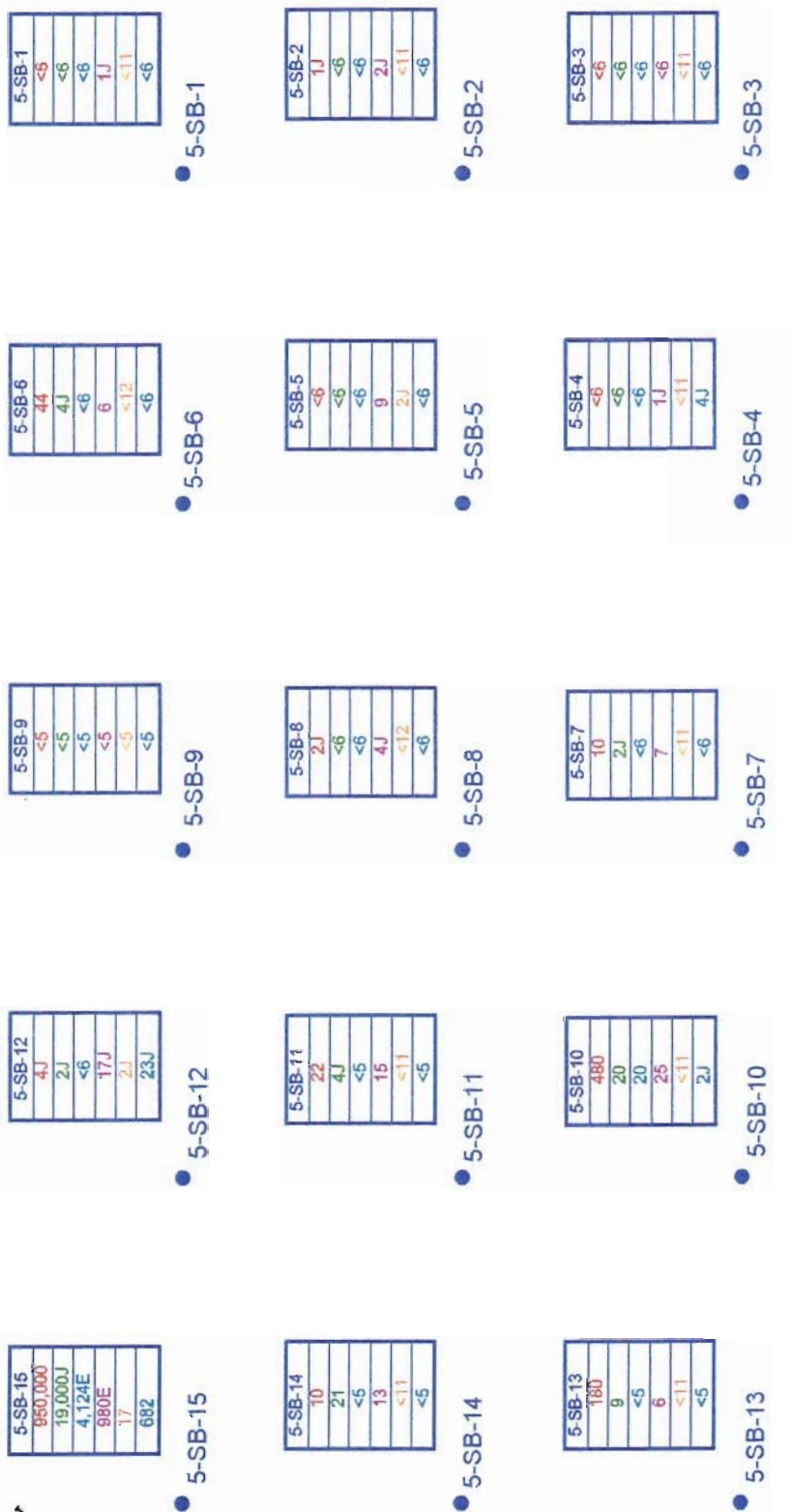


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30 Sea Cliff Avenue
Glen Cove, New York 11542

Monitoring Well Locations
(On-Site Wells)

DATE:	03/12/00	DRAWN:	DJS	FIGURE:
REV. NO.	1	DESIGNED:	DJS	3-6
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE3-6.DWG	

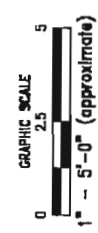


PALL CORPORATION
BUILDING (NORTH EXTERIOR
WALL)

TEMP. STORAGE SHED

SAMPLE ID	PCE	TCE	111TCA	12DCE	BTEX

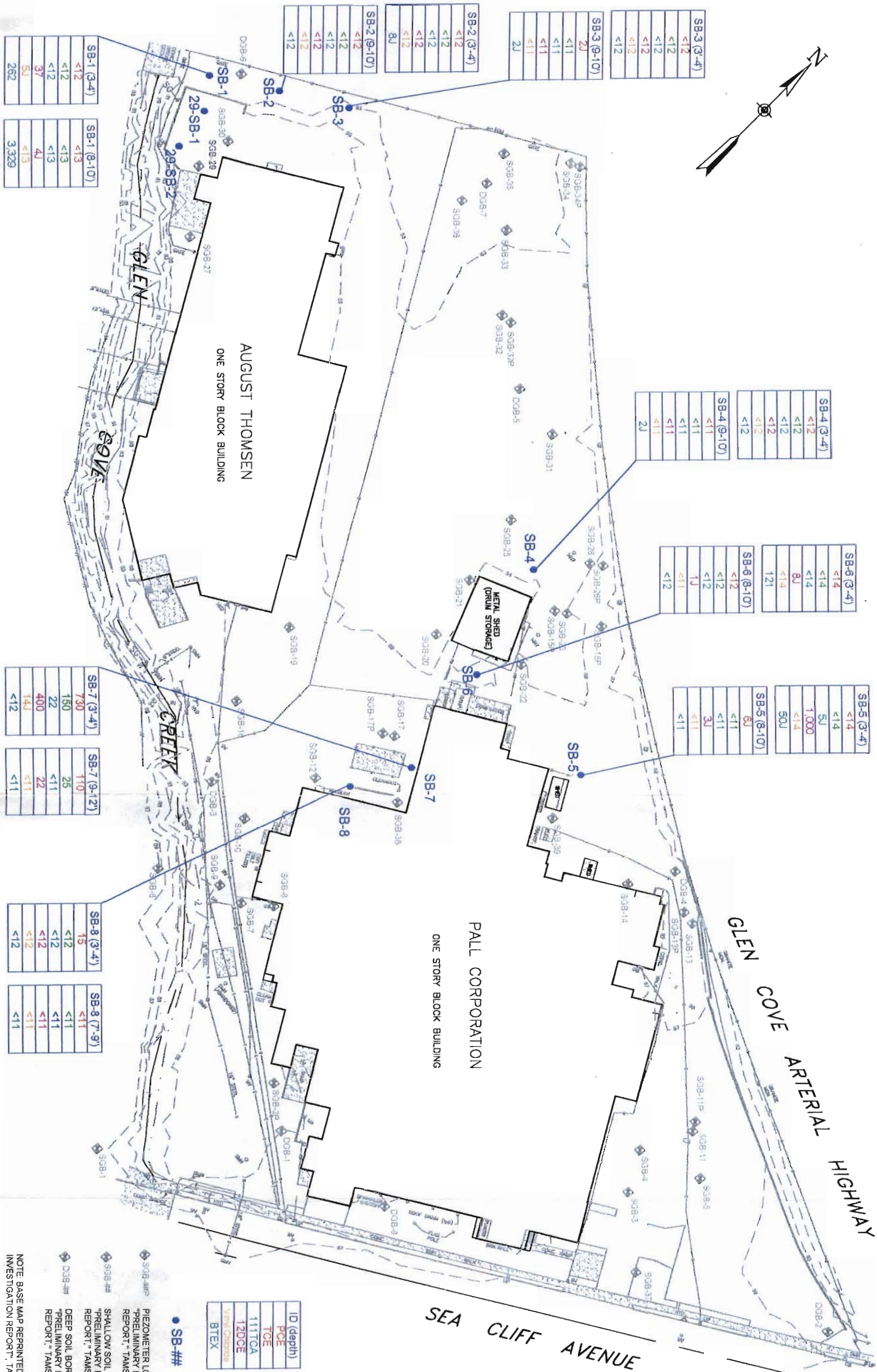
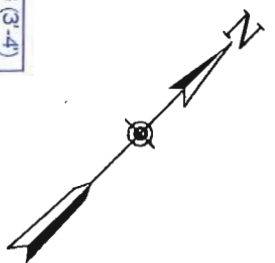
SAMPLE RESULTS SUMMARY
ALL SAMPLES 0' - 4' BGS
(RESULTS IN UG/KG)



5-SB-## SOIL BORING LOCATION

ENVIRO-SCIENCES, INC.
312 EAST MAIN STREET
PATCHOGUE, NEW YORK 11772
PHONE: 516-207-9005 FAX: 516-207-3614

Pall Corporation Glen Cove, NY	SB-5 Area Soil Investigation Sample Results Summary	DATE: 03/18/00	DRAWN: DJS	DESIGNED: DJS	PROJECT NO. MT&E-PALL-M371	FIGURE: 4-2
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SEA CLIFF AVENUE

GLEN COVE ARTERIAL HIGHWAY

ID (depth)
PCE
TCE
111TCA
12DOE
VINYLCHLORIDE
BTEX

SAMPLE RESULTS SUMMARY (ug/kg)



1" = 60'-0" (Approximate)

• SB-## PHASE II RI SOIL BORING LOCATION

PIEZOMETER LOCATION AS DEFINED IN "PRELIMINARY FOCUSED REMEDIAL INVESTIGATION REPORT," TAMS & GZA, 4/99

SHALLOW SOIL BORING LOCATION AS DEFINED IN "PRELIMINARY FOCUSED REMEDIAL INVESTIGATION REPORT," TAMS & GZA, 4/99

DEEP SOIL BORING LOCATION AS DEFINED IN "PRELIMINARY FOCUSED REMEDIAL INVESTIGATION REPORT," TAMS & GZA, 4/99

NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT," TAMS & GZA, 4/99

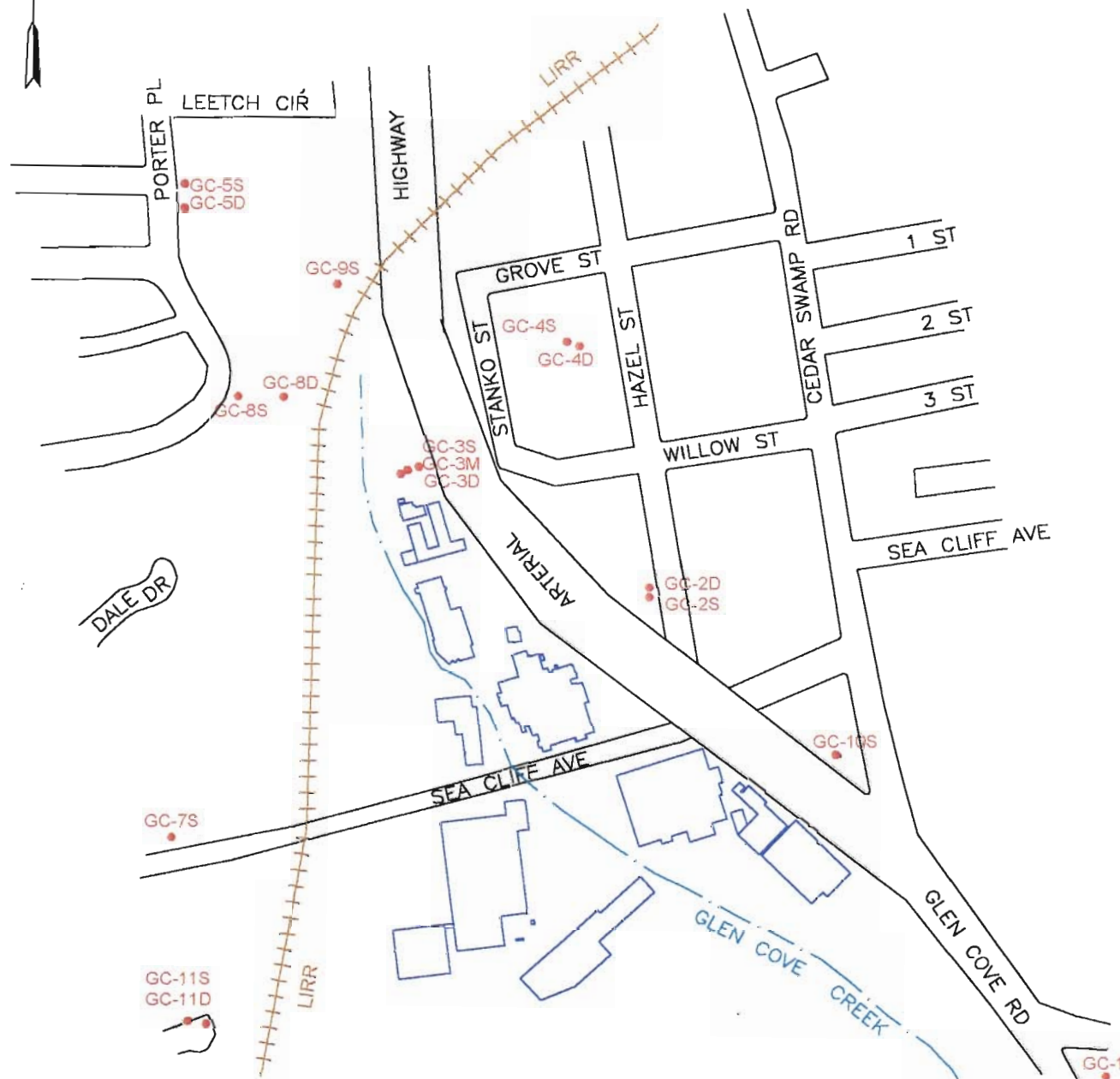
ENVIRO-SCIENCES, Inc.
312 EAST MAIN STREET
PATCHOGUE, NEW YORK 11772
PHONE: 631-207-9005 FAX: 631-207-3614

PALL
Pall Corporation
30 Sea Cliff Avenue
Glen Cove, New York 11542

Phase II Soil Investigation Results
(VOC Summary)

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PROJECT NO.	MT&E-PALL-M371

DRAWN: DJS
DESIGNED: DJS
FIGURE: 4-1



FILE: figure4-3a.dwg REV. # 1

GRAPHIC SCALE
0 250 500
1" = 500' (Approximate)



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312 EAST MAIN STREET
PATCHOGUE, NEW YORK 11772
PHONE: 516-207-9005 FAX: 516-207-3614

Pall Corporation
Glen Cove, New York
Off-Site, Public Monitoring
Well Locations Near Site

DATE: 03/13/00

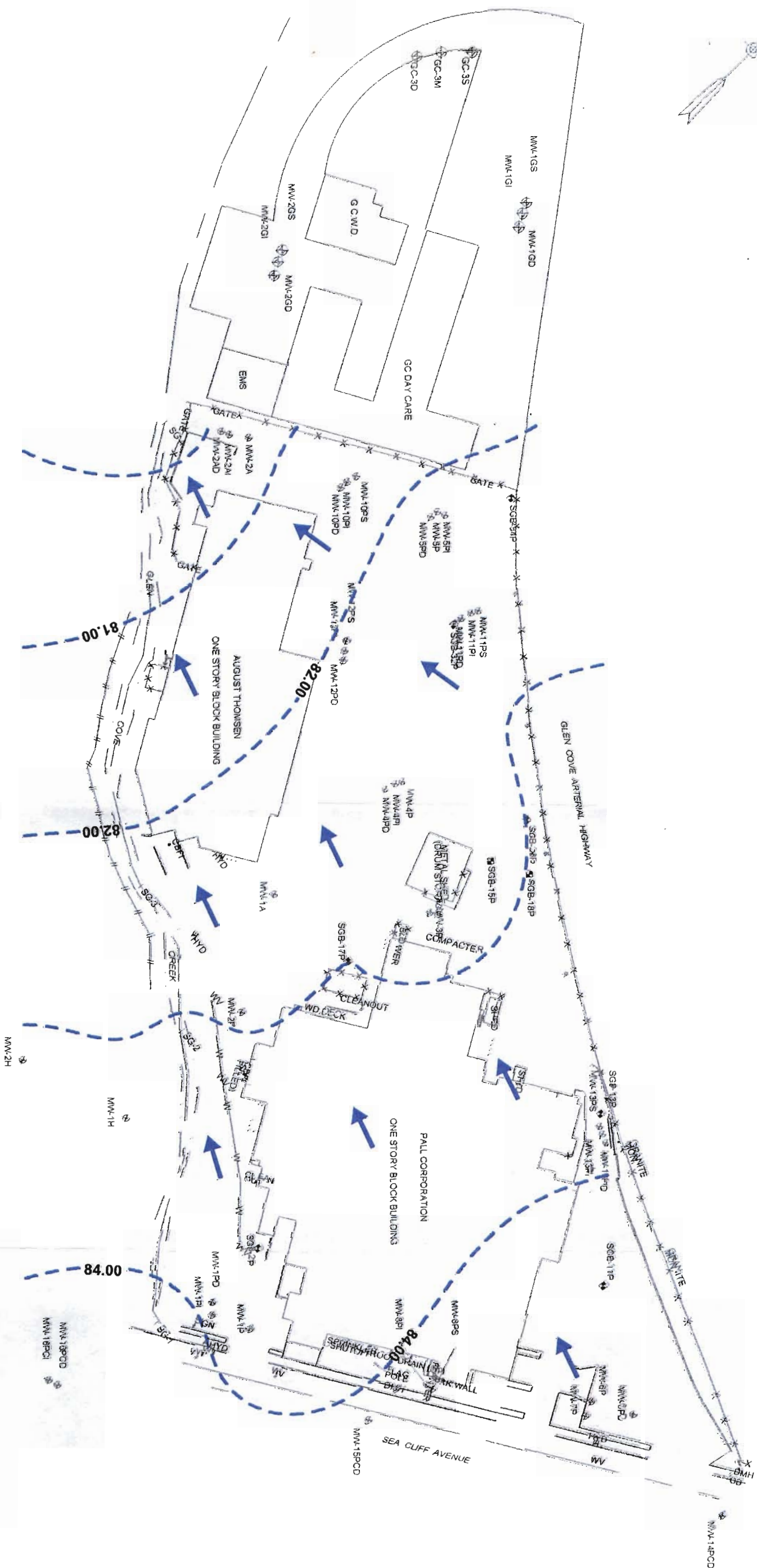
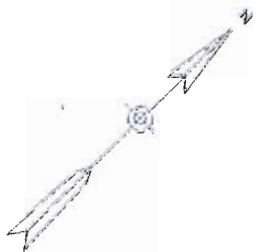
DRAWN: DJS

DESIGNED: DJS

MT&E-PALL-M371

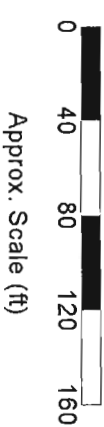
FIGURE:

4-3



Approximate Shallow Groundwater Table Elevation (ft)
Well Gauging Completed on March 12, 1998
(Nassau County Datum)

Inferred Groundwater Flow Direction



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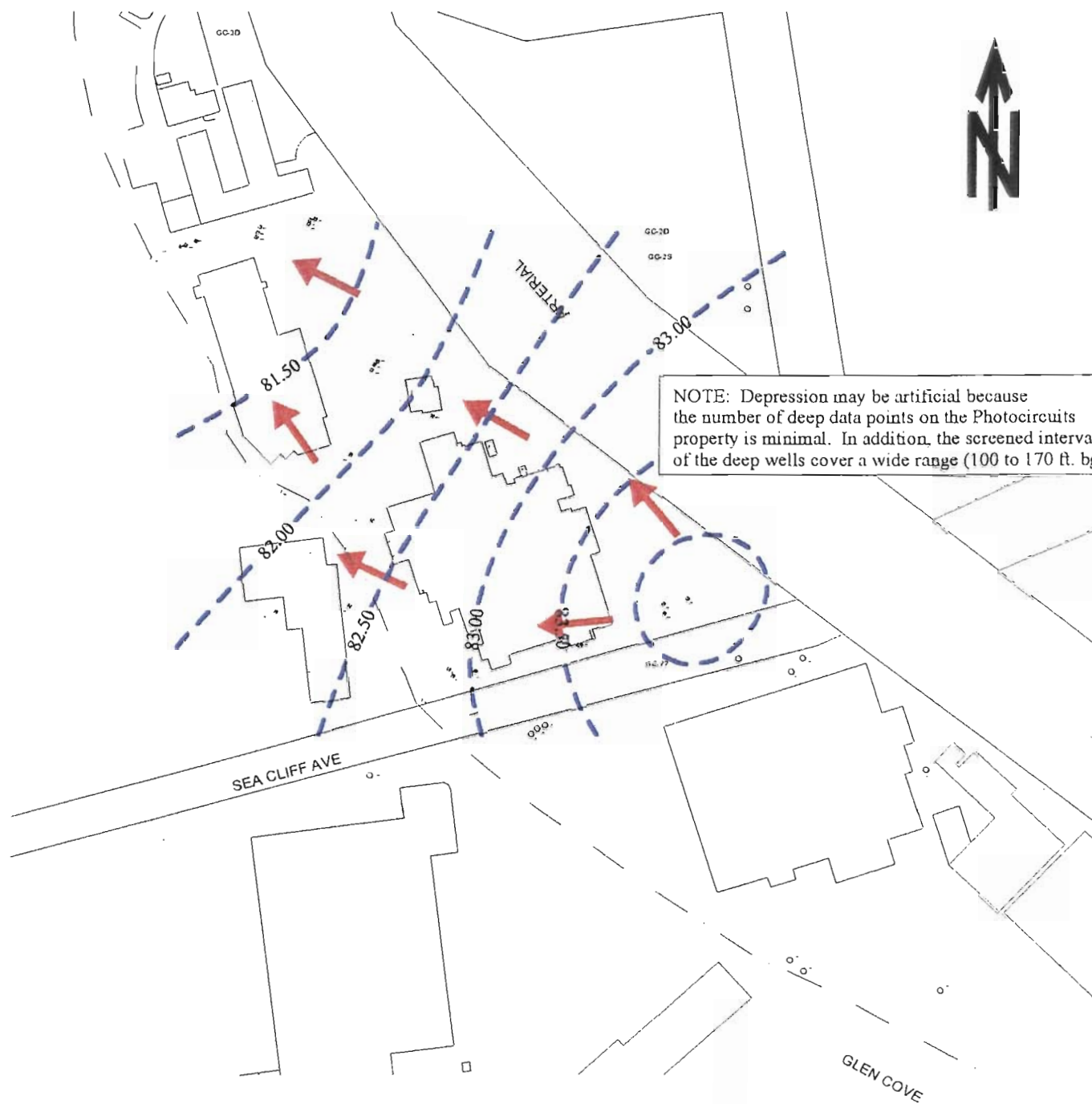
**SHALLOW GROUNDWATER ELEVATION
CONTOURS AND FLOW DIRECTION
(Phase I RI Data Collected 3/12/98)**

Date: Mar 17, 2000
Drawn: DIS

Project: mlke-pall
Proj. No.: M371

Drawing: DECGW2-26.SRF
Figure No: 44

Shallow Groundwater Elevation Contours
(Data collected May 6, 1999)





NOTE: Depression may be artificial because the number of deep data points on the Photocircuits property is minimal. In addition, the screened intervals of the deep wells cover a wide range (100 to 170 ft. bgs).

NOTES:

1. Data collected on May 6, 1999 by ESI and NYSDEC personnel.
2. Contours are approximate only, estimated by Krigging routine.
3. Inferred groundwater flow direction based upon groundwater elevation contour data.
4. Groundwater elevation is Nassau County datum based on well survey completed by Sidney Bowne & Sons (6/99) and historic survey data.

LEGEND:

-  Inferred groundwater flow direction (approximate)
-  Inferred constant groundwater elevation contour (approximate)



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Date: July 19, 1999
Drawn: DJS

Client / Project: MT&E-PALL
Proj. No.: M37104

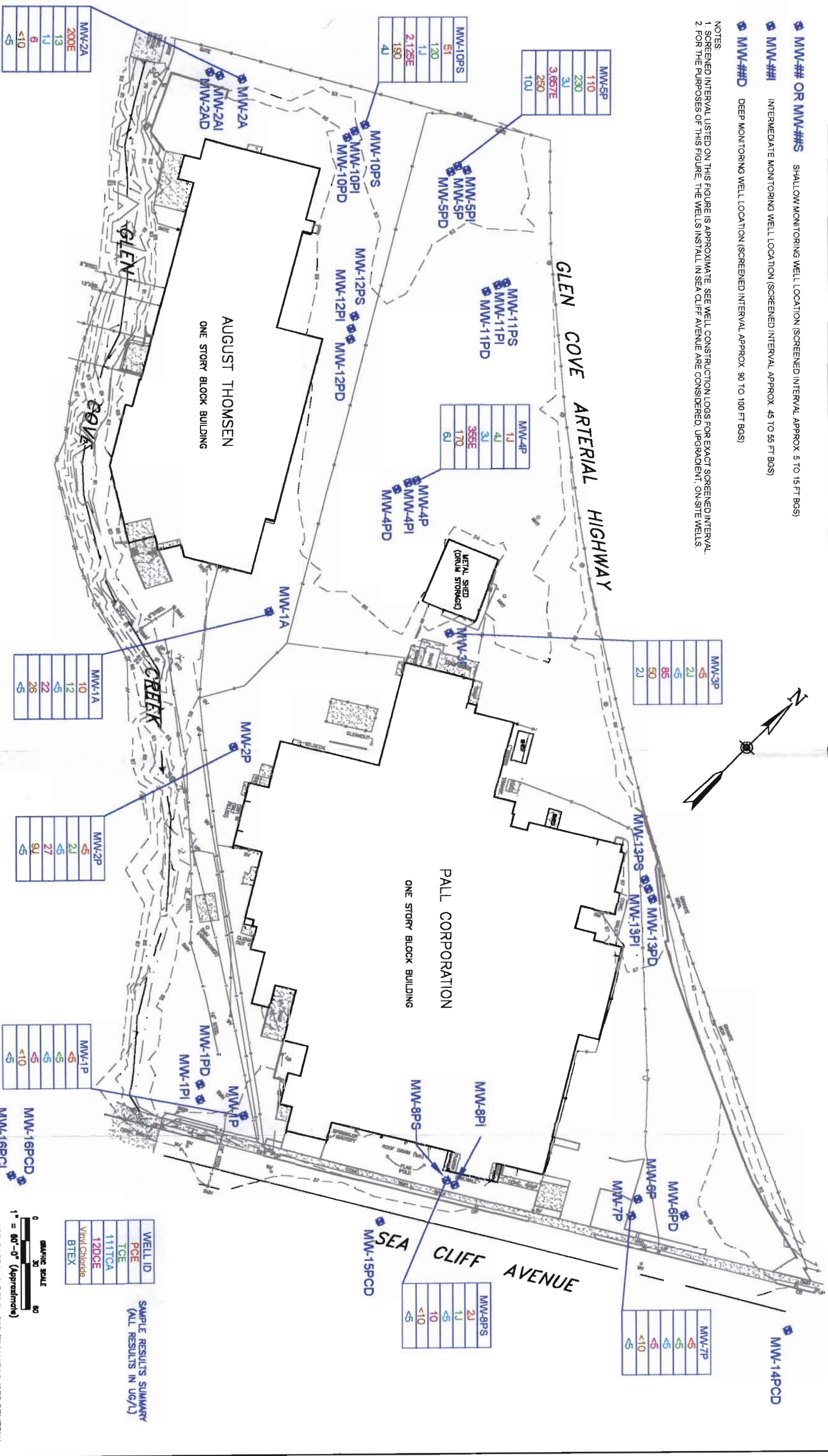
Drawing: PALLPCDP.SRF
Figure No: 4-6

**PALL CORPORATION
GLEN COVE, NEW YORK**

**Deep Groundwater Elevation Contours -
(Data collected May 6, 1999)**

- MW-## OR MW-##S SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 5 TO 15 FT BGS)
- MW-##I INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- MW-##D DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED IN SEA CLIFF AVENUE ARE CONSIDERED UPGRADEMENT, ON-SITE WELLS.



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30 Sea Cliff Avenue
Glen Cove, New York 11542

Groundwater Sample Results Summary
(Shallow Wells, Samples Collected 4/99)

DATE: 06/29/00
REV. NO. 1
PROJECT NO. MT&E-PALL-M371
DRAWN: DJS
DESIGNED: DJS
FILE: FIGURE4-7.DWG
FIGURE: 4-11

- NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED IN SEA CLIFF AVENUE ARE CONSIDERED "UPGRADED," ON-SITE WELLS.



SAMPLE RESULTS SUMMARY
(ALL RESULTS IN UG/L)

NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 4/99

Groundwater Sample Results Summary (Intermediate Wells, Samples Coll. 4/99)

DATE:	6/29/00	DRAWN:	DJS
REV. NO.	1	DESIGNED:	DJS
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE4-8.DWG

FIGURE:
4-12

- NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALL IN SEA CLIFF AVENUE ARE CONSIDERED, UPGRADED, ON-SITE WELLS.



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Glen Cove, New York 11542

Groundwater Sample Results Summary (Deep Wells, Samples Collected 4/99)

DATE: 6/29/00

REV. NO. 1

PROJECT NO. MT&E-PALL-M371

DRAWN: DJS

DESIGNED: DJS

FILE: FIGURE4-13a.DWG

FIGURE:

4-13

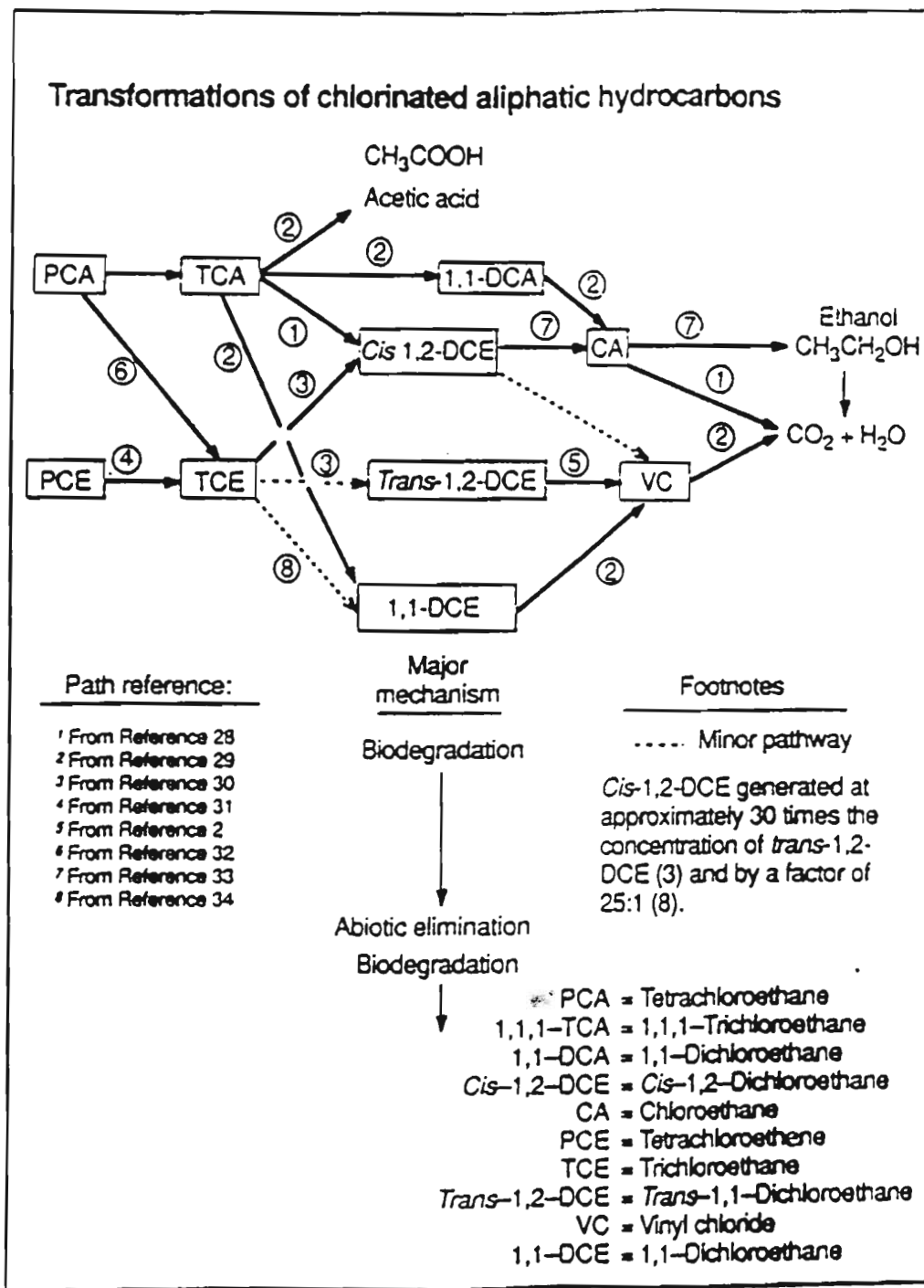


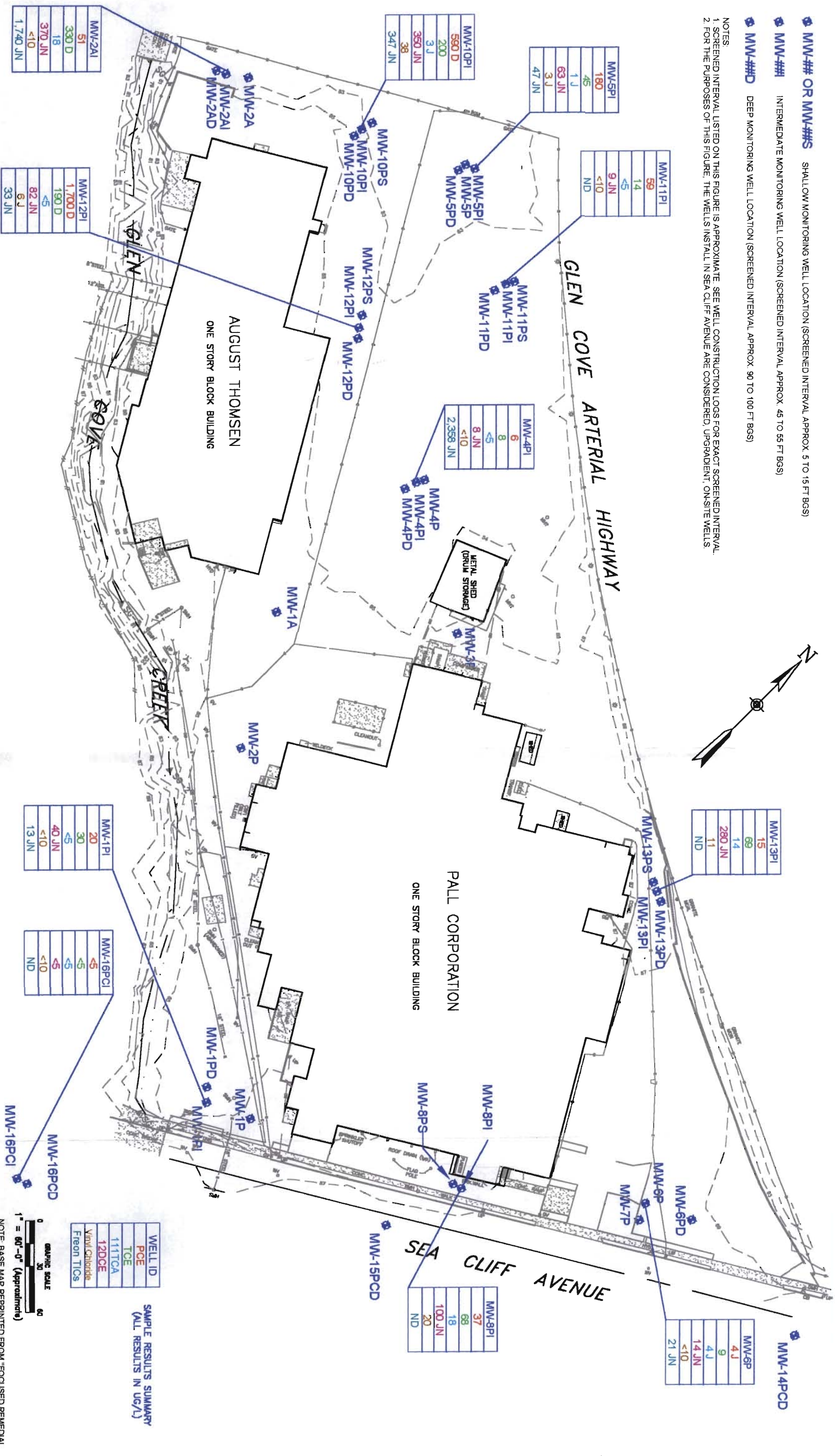
Figure 4-14
Chlorinated Organics Degradation Pathways

Figure reprinted from Olsen, Roger L., & Davis, Andy, "Predicting the Fate and transport of organic Compounds in Groundwater," HMC, July/August 1990 (see references)

FIGURE:
4-15

- **MW-## OR MW-##S** SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 5 TO 15 FT BGS)
- **MW-##H** INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- **MW-##D** DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED IN SEA CLIFF AVENUE ARE CONSIDERED UPGRADEMENT, ON-SITE WELLS.



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Groundwater Sample Results Summary
(Intermediate Wells, Samples Coll. 1/00)

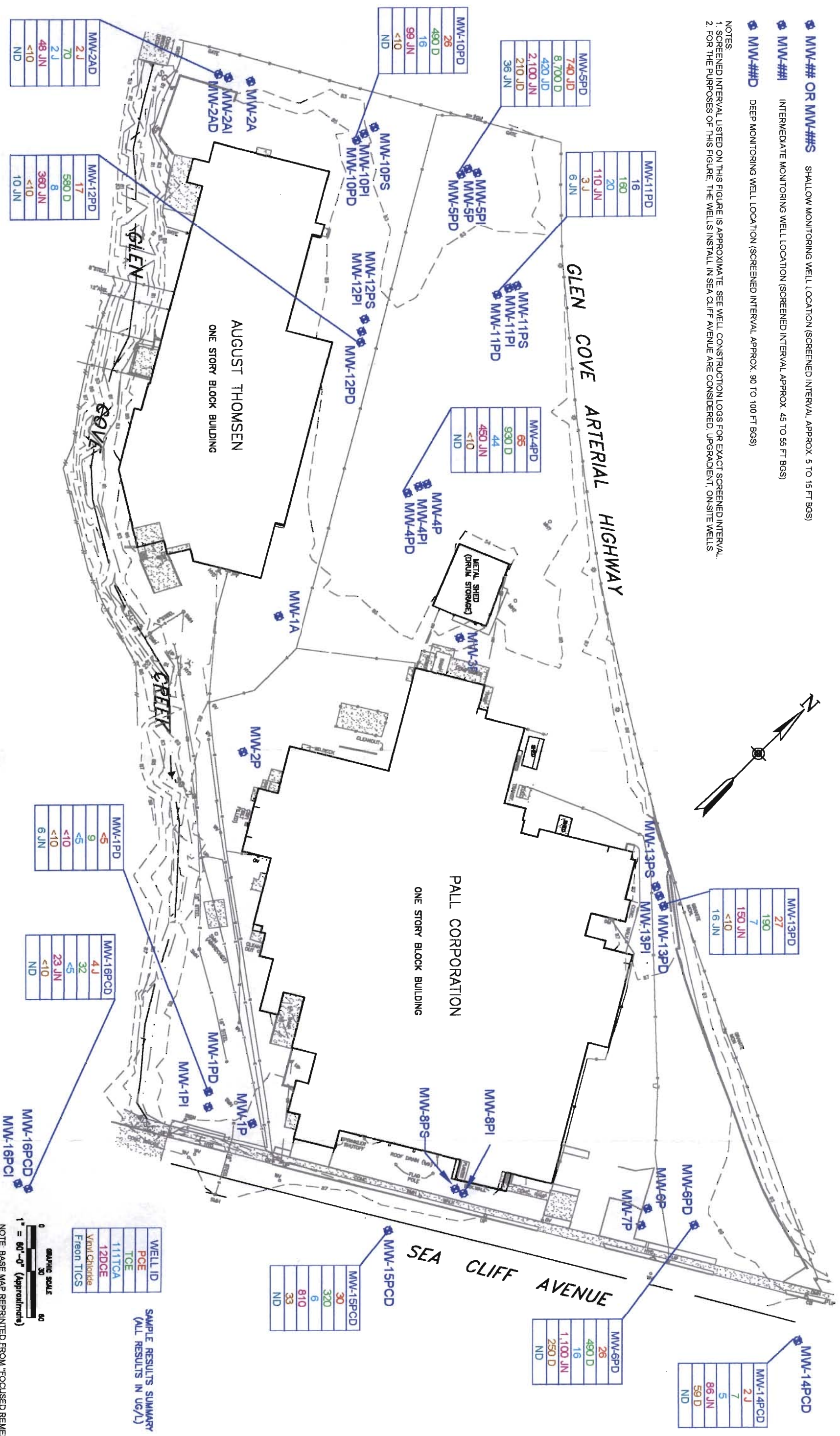
DATE: 6/29/00
REV. NO. 1
PROJECT NO. MT&E-PALL-M371

DRAWN: DJS
DESIGNED: DJS
FILE: FIGURE4-16a.DWG

FIGURE:
4-16

INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALL IN SEA CLIFF AVENUE ARE CONSIDERED 'UPGRADIENT' ON-SITE WELLS.




SAMPLE RESULTS SUMMARY
(ALL RESULTS IN UG/L)

GRAPHIC SCALE

0 30 60

1" = 60'-0" (Approximate)

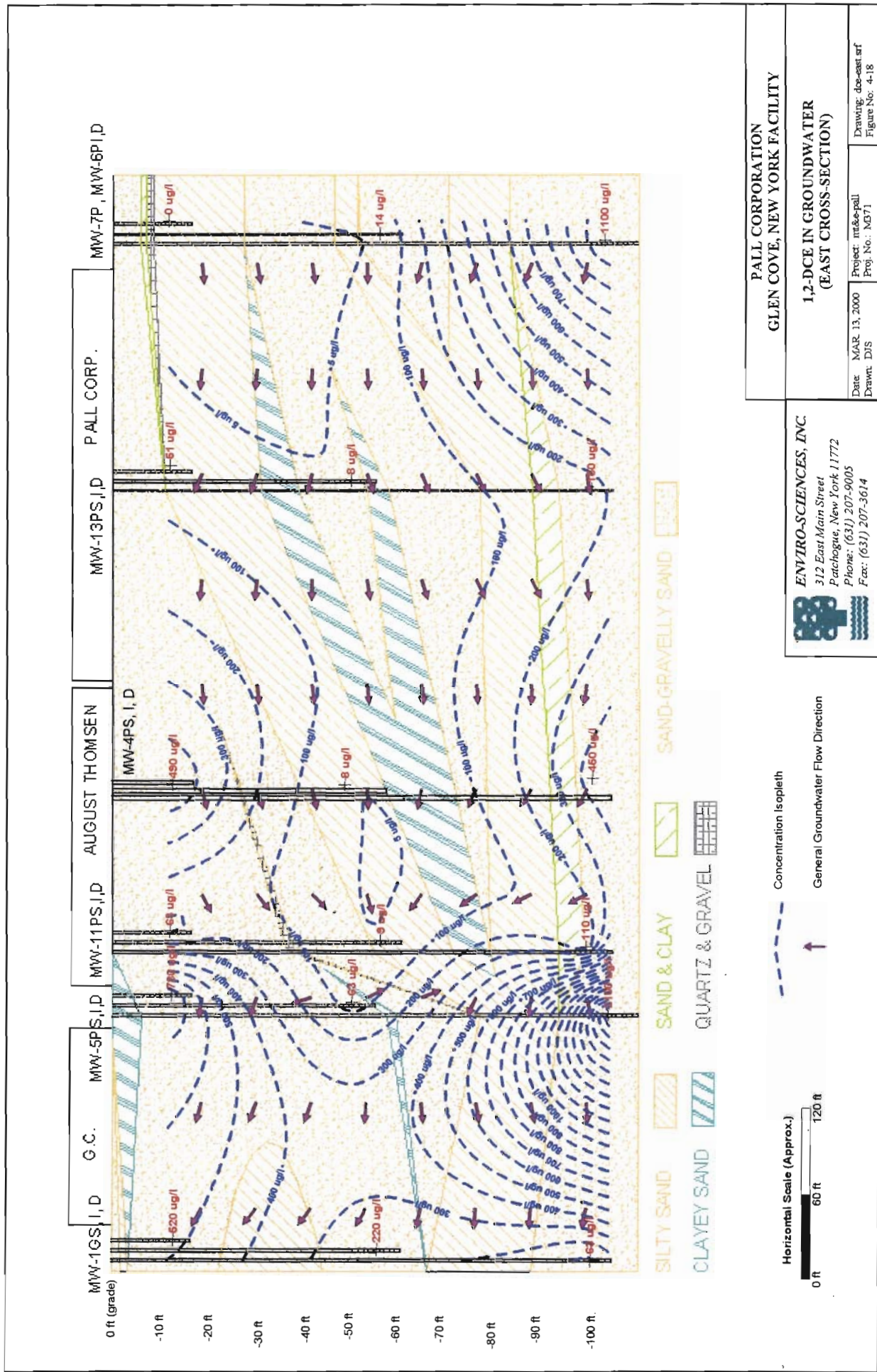
NOTE: BASE MAP REPRINTED FROM "FOCUSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA 4/99

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Groundwater Sample Results Summary (Deep Wells, Samples Coll. 1/00)

DATE:	6/29/00	DRAWN:	DJS
REV. NO.	1	DESIGNED:	DJS
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE4-17a.DWG

FIGURE:
4-17



PALL CORPORATION
GLEN COVE, NEW YORK FACILITY

1,2-DCE IN GROUNDWATER
(EAST CROSS-SECTION)

Date: MAR 13, 2000
Project: mae-pall
Drawn: DIS
Drawing: doe-east.srf
Figure No: 4-18

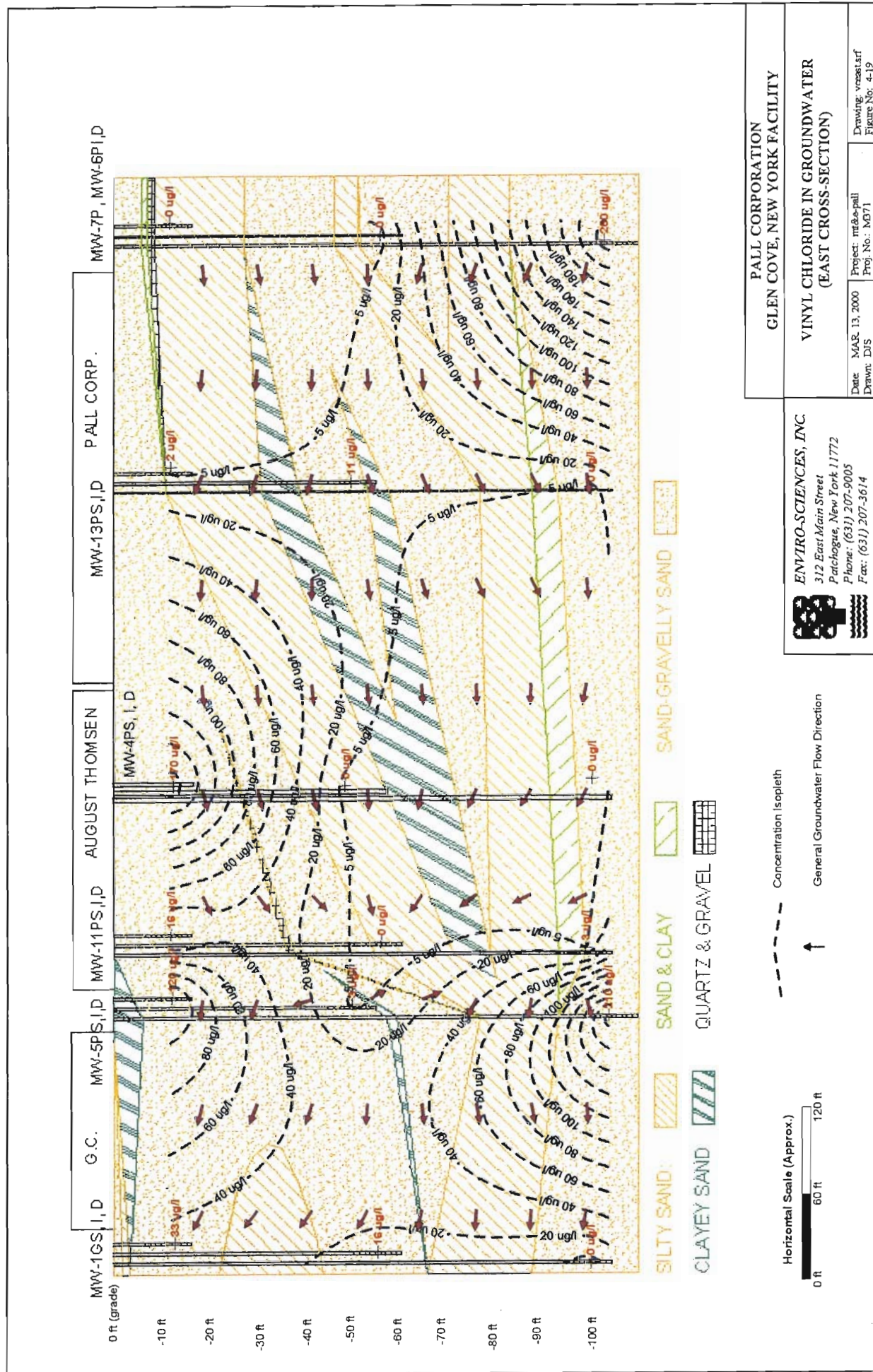
ENVIRO-SCIENCES, INC.
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Patchogue, New York 11772
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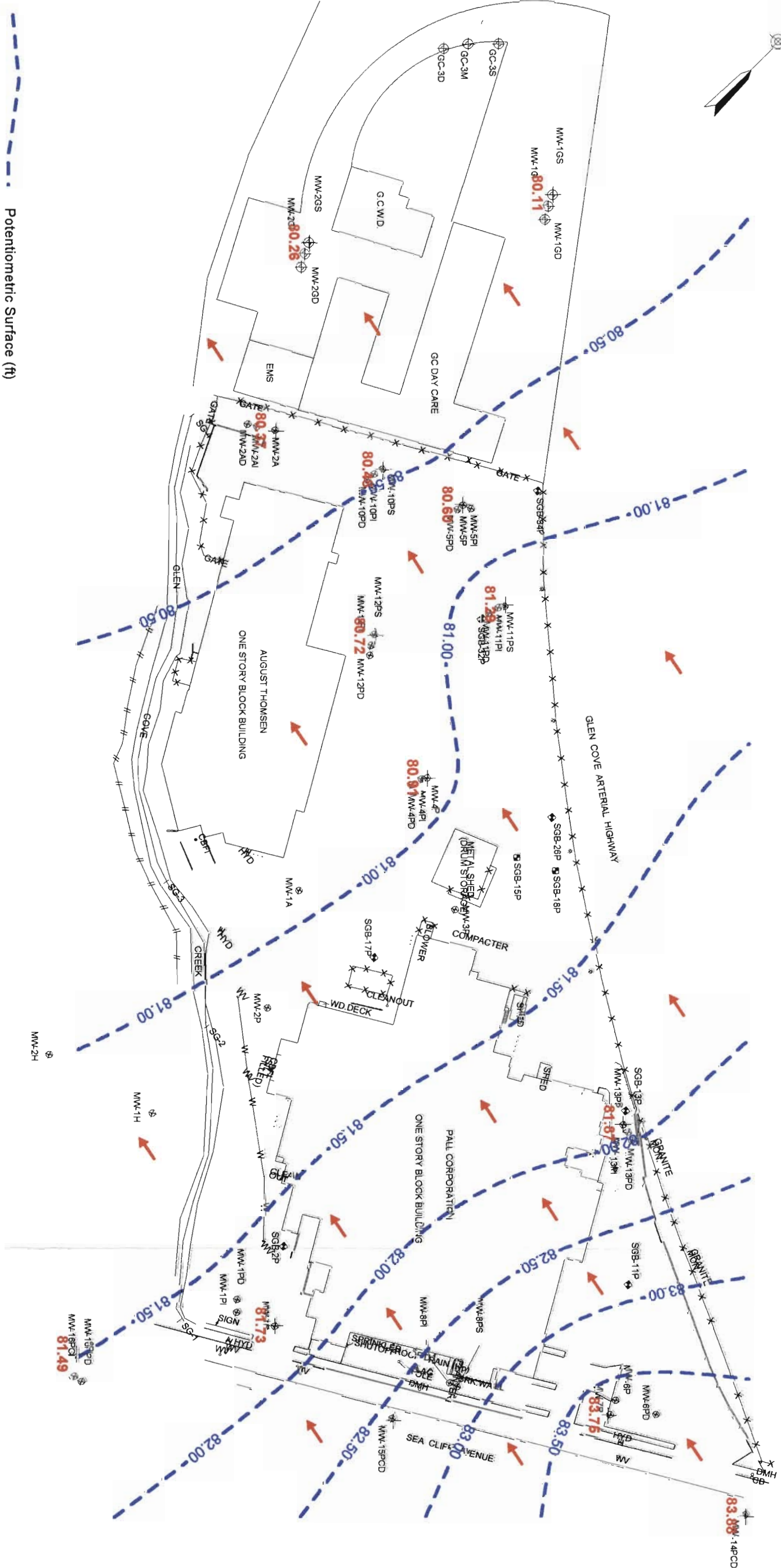
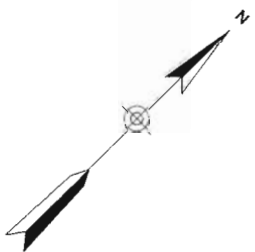
Concentration Isopleth

General Groundwater Flow Direction

Horizontal Scale (Approx.)

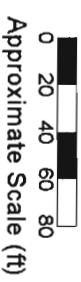
0 ft 60 ft 120 ft





↑ Inferred GW Flow Direction

--- Potentiometric Surface (ft)



NOTE: MW-4PI gauging data was not used in development of the intermediate groundwater potentiometric surface map because the gauging data is believed to be inaccurate.

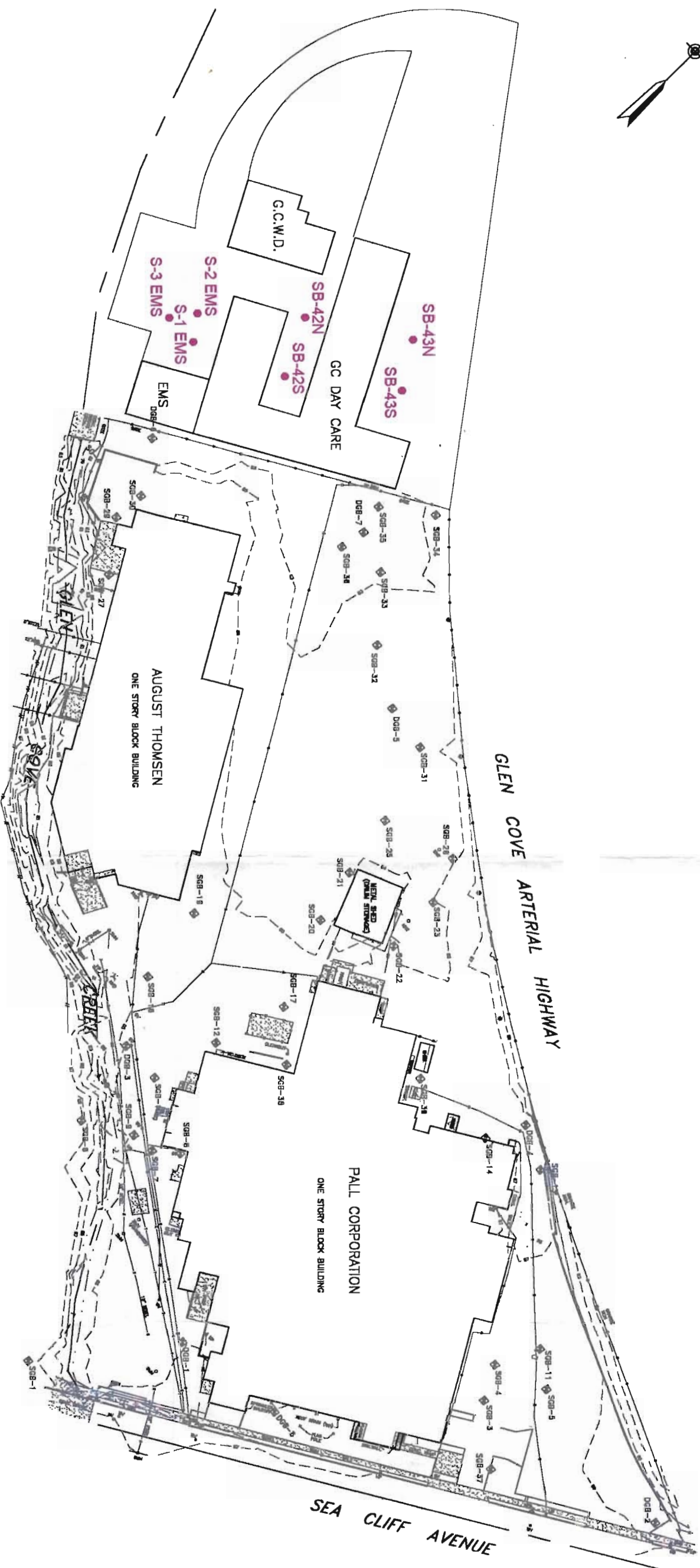
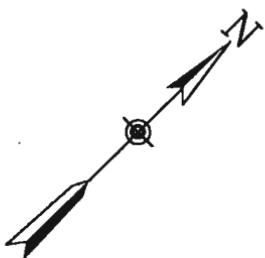


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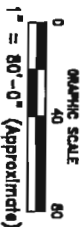
Groundwater Elevation Contours
(Deep Groundwater Zone, Data Collected 01/00)

Date: Apr. 05, 1999	Client / Project: MT&E-PALL	Drawing: DPGW0100.SRF
Drawn: DJS	Proj. No.: M37104	Figure No.: 4-9



LEGEND

SB-# • OFF-SITE SOIL SAMPLE LOCATION



NOTE: BASE MAP REPRINTED FROM FOCUSED REMEDIAL INVESTIGATION REPORT, TAMS & GZA, 4/99

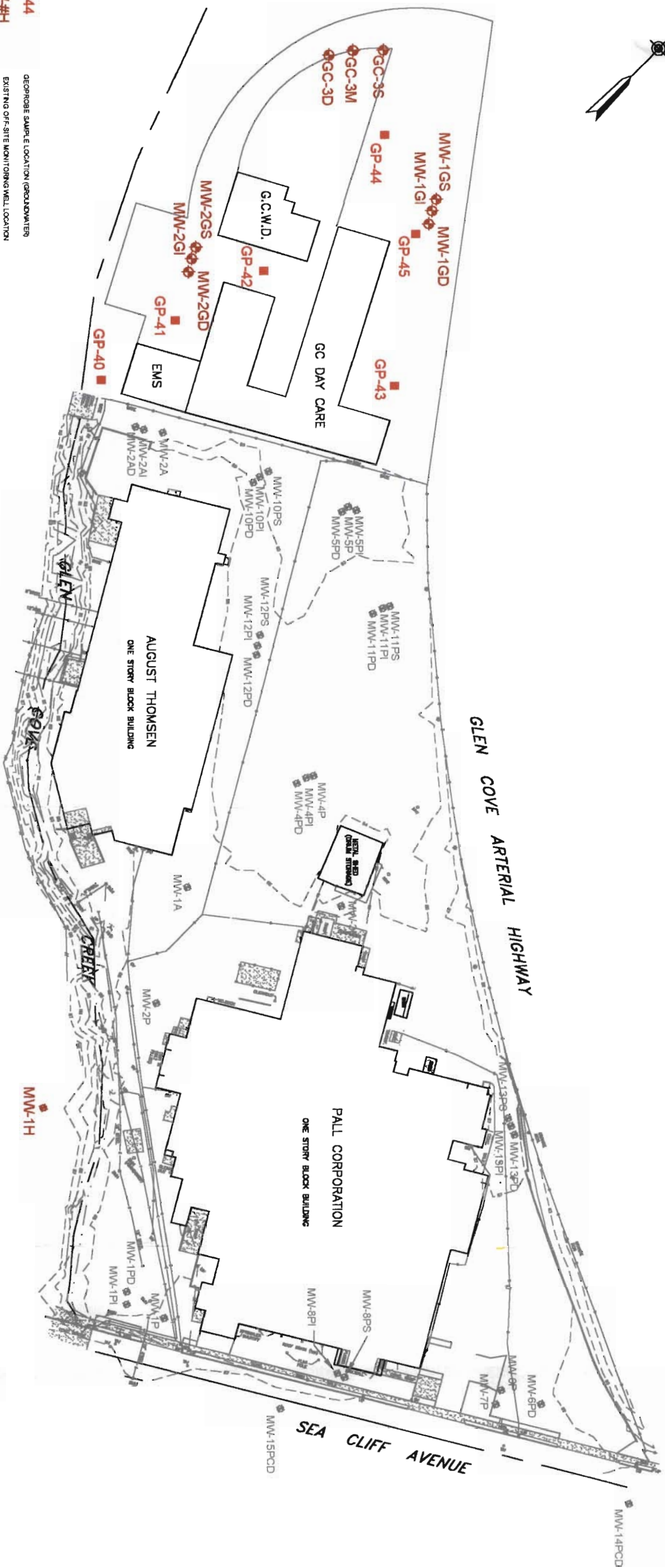
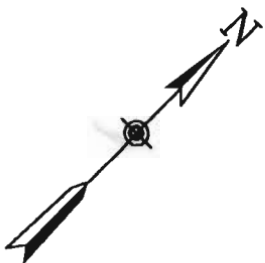
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PATCHOGUE, NEW YORK 11772
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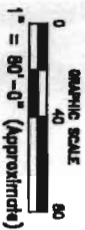
Soil Sample Locations
(Limited Off-Site Investigation)

DATE:	6/29/00	DRAWN:	DJS	FIGURE:
REV. NO.	1	DESIGNED:	DJS	5-1
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURES-1a.DWG	



- GP-44 GEOPROBE SAMPLE LOCATION (GROUNDWATER)
- ◆ MW-#H EXISTING OFF-SITE MONITORING WELL LOCATION (ASSOCIATED DRAPERY SITE)
- ◆ GC-#S, M, D EXISTING OFF-SITE MONITORING WELL LOCATION (S = SHALLOW, M = INTERMEDIATE, D = DEEP) (CITY OF GLEN COVE SITE)
- ◆ MW-#S, I, D OFF-SITE MONITORING WELL LOCATION (S = SHALLOW, I = INTERMEDIATE, D = DEEP) (ADDITIONAL OFF-SITE WELLS SAMPLED THROUGHOUT AREA - SEE TEXT)
- ◆ MW-# OR MW-#S SHALLOW MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 5 TO 15 FT BGS)
- ◆ MW-#H INTERMEDIATE MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 45 TO 55 FT BGS)
- ◆ MW-#D DEEP MONITORING WELL LOCATION (SCREENED INTERVAL APPROX. 90 TO 100 FT BGS)

NOTES:
1. SCREENED INTERVAL LISTED ON THIS FIGURE IS APPROXIMATE. SEE WELL CONSTRUCTION LOGS FOR EXACT SCREENED INTERVAL.
2. FOR THE PURPOSES OF THIS FIGURE, THE WELLS INSTALLED IN SEA CLIFF AVENUE ARE CONSIDERED UPGRADE/REPAIR, ON-SITE WELLS.
NOTE: BASE MAP REPRINTED FROM "FOCUSSED REMEDIAL INVESTIGATION REPORT", TAMS & GZA, 498



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Off-Site Groundwater Sample Locations
(Limited Off-Site Investigation)

DATE:	6/29/00	DRAWN:	DJS	FIGURE:
REV. NO.	1	DESIGNED:	DJS	5-2
PROJECT NO.	MT&E-PALL-M371	FILE:	FIGURE5-2.DWG	

TABLE 1-1
SUMMARY OF SPILLS REPORTED IN EDR DATABASE

PROPERTY OWNER	SPILL NUMBER OR LUST	SPILL DATE	MATERIAL SPILLED AND CLEANUP ACTIONS TAKEN	SPILL STATUS
Associated Draperies Property	None Reported	NA	NA	NA
August Thomsen Property	None Reported	NA	NA	NA
Carney St. Well Field Property	None Reported	NA	NA	NA
Kelly St. Well Field Property	9409395	10/13/1994	Tank test failure. A manway gasket at the top of the UST was repaired and tank passed re-test. No contamination encountered	Closed 11/10/1994
Pall Corp 30 Sea Cliff Ave Glen Cove, NY	8808374	01/20/1989	Spilled approx. 150 gallons of Santoflex #13 to Creek. Cleanup completed by Pall. 150 gallons recovered	Closed 1/20/89
Photocircuits: 31 Sea Cliff Ave. Glen Cove, NY	9302725	05/29/1993	Explosion in building caused carbon pellets to be released. Corrective action taken including collection of about 110 gallons of pellets.	Cleanup ceased 9/2/1994 but no spill closed date in database.
Photocircuits: 31 Sea Cliff Ave. Glen Cove, NY	9609700	11/04/1996	Underground wastewater pipe broke releasing an estimated 10,000 gallons of wastewater to the soil and the Creek. Corrective action reportedly taken but not defined.	Closed 11/04/1996
Photocircuits: "13" Sea Cliff Ave. Glen Cove, NY	8710216	03/07/1988	Leaking gasoline tank with a release to the Creek. 3-55 gallon drums of soil and speedi-dry removed.	Cleanup ceased 8/02/1988 NFA determination by NYSDEC on 8/02/1988
Photocircuits: 33 Sea Cliff Ave. Glen Cove, NY	9813638	02/06/1999	An anonymous caller reported a spill of a "known material" into the "stream." No additional information available.	Closed 05/21/1999
Slater Electric (45A) 45 Sea Cliff Ave. Glen Cove, NY	8700223	04/08/1987	Employees changing oil on cars and discarding oil and filters into the Creek.	Cleanup ceased 4/10/1987 when NYSDEC investigator "found nothing"
Slater Electric (45A) 45 Sea Cliff Ave. Glen Cove, NY	8707417	11/30/1987	Tank test failure for a 10,000 gallon UST. Contents not identified. Local MW's did not show SPH for over a year. UST was filled with concrete.	Closed 6/29/1989
Slater Electric (45A) 45 Sea Cliff Ave. Glen Cove, NY	8806630	11/08/88	Broken gasket on an oil filter resulted in a release of oil and water mixture. 254 gallons of oil and water removed. 4-5 yards of soil removed and a boom was placed in Creek	Cleanup ceased 11/09/1988

TABLE 4-1
SUMMARY OF DETECTED VOC COMPOUNDS IN SOIL SAMPLES
(Phase I RI Soil Investigation)

Sample ID: Sample Depth (ft): Units of Measure:	RSCO UG/KG	DGB-1A-3.5 3.5 UG/KG	DGB-2A-3 3 UG/KG	DGB-3A-3 3 UG/KG	DGB4A-3 3 UG/KG	DGB-5A-2 2 UG/KG	DGB-6 4 UG/KG	DGB-7A-4 4 UG/KG	DGB-8-2.5 2.5 UG/KG	SGB-1 11.5 to 12 UG/KG	SGB-2-2 2 UG/KG	SGB-3-3 3 UG/KG	SGB-4-2 2 UG/KG	SGB-5A-3 3 UG/KG	SGB-7-2 2 UG/KG	SGB-8-2 2 UG/KG	SGB-9-2 2 UG/KG
Detected Compound																	
Tetrachloroethene	1400	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	8 J	11 U	5 J
Trichloroethene	700	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	27 U	11 U	11 U
1,2-Dichloroethene(Total)	300 ⁵	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	17 J	11 U	11 U
Vinyl chloride	120	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	27 U	11 U	11 U
OTHER DETECTED COMPOUNDS																	
Methylene chloride	100	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	27 U	11 U	11 U
Acetone	200	31 U	16 U	83 U	53 UJ	11 U	73 J	27 U	12 U	16 U	11 UJ	21 UJ	24 U	25 UJ	33 UJ	49 UJ	13 UJ
2-Butanone	300	11 U	12	28	14	11 UJ	17 J	11 J	12 U	11 UJ	11 U	11 U	11 U	11 U	27 UJ	14 J	11 UJ
1,1,1-Trichloroethane	800	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	27 U	11 U	11 U
Benzene	60	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 UJ	11 UJ	11 UJ	11 U	27 U	11 U	11 U
Toluene	1500	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	27 U	11 U	11 U
Ethylbenzene	5500	11 U	11 U	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	56	2 J	11 U
Xylenes (Total)	1200	11 U	1 J	11 U	14 U	11 U	11 U	11 U	12 U	11 U	11 U	11 U	11 U	11 U	410	15	11 U

- NOTES:
- DGB = Deep Geoprobe Boring
 - SGB = Shallow Geoprobe Boring
 - Qualifiers defined in Appendix F
 - RSCO = "Recommended Soil Cleanup Objectives" in NYSDEC Division Technical and Administrative Guidance Memorandum on the Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994 (TAGM 4046).
 - Blank = No "Recommended Soil Cleanup Objective" standard.
 - Recommended Soil Cleanup Objective standard for 1,2-Dichloroethene (trans).
 - TCL VOCs not listed were not detected in any of the soil samples. Bold, italic indicates an exceedance of the RSCO.

TABLE 4-1
SUMMARY OF DETECTED VOC COMPOUNDS IN SOIL SAMPLES
(Phase I RI Soil Investigation)

Sample ID: Sample Depth (ft): Units of Measure: Detected Compound	RSCO	SGB-10-3 3 UG/KG	SGB-11-2 2 UG/KG	SGB-12-2 2 UG/KG	SGB-13-2 2 UG/KG	SGB-14-3 3 UG/KG	SGB-16-3 3 UG/KG	SGB-17-3 3 UG/KG	SGB-19 3.5 to 4 UG/KG	SGB-20-3 3 UG/KG	SGB-21-2 2 UG/KG	SGB-22-3 3 UG/KG	SGB-22-3R 3 UG/KG	SGB-23-3 3 UG/KG	SGB-24-6 6 UG/KG	SGB-25-2.5 2.5 UG/KG	SGB-26-3 3 UG/KG
Tetrachloroethene	1400	11 U	12 U	11 U	11 U	11 U	11 U	1 J	11 U	2 J	430	700	10 J	11 U	120 U	11 U	11 U
Trichloroethene	700	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	21 J	44 U	11 U	120 U	11 U	11 U
1,2-Dichloroethene(Total)	300 ⁶	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	16	27 U	15 J	5 J	11 U	120 U	11 U	11 U
Vinyl chloride	120	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 UJ	4 J	27 U	130 U	44 U	11 U	120 U	11 U	11 U
OTHER DETECTED COMPOUNDS																	
Methylene chloride	100	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	130 U	44 U	11 U	120 U	11 UJ	11 U
Acetone	200	65 J	35 UJ	13 UJ	11 UJ	14 UJ	64 J	11 UJ	11 U	74 J	27 UJ	380 UJ	44 U	14 UJ	120 UJ	11 UJ	18 UJ
2-Butanone	300	18	11 J	11 U	11 U	11 UJ	19	11 U	11 UJ	24 J	27 U	230	27 J	11 UJ	120 UJ	11 U	11 UJ
1,1,1-Trichloroethane	800	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	130 U	44 U	11 U	120 U	11 U	11 U
Benzene	60	11 U	12 UJ	11 U	11 UJ	11 U	11 U	11 U	11 U	11 U	27 U	130 U	44 U	11 U	120 U	11 U	11 U
Toluene	1500	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	14 J	14 J	11 U	120 U	11 U	11 U
Ethylbenzene	5500	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	130 U	14 J	11 U	17 J	11 U	11 U
Xylenes (Total)	1200	11 U	12 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U	27 U	79 J	150	11 U	96 J	11 U	11 U

TABLE 4-1
SUMMARY OF DETECTED VOC COMPOUNDS IN SOIL SAMPLES
(Phase I RI Soil Investigation)

Sample ID: Sample Depth (ft): Units of Measure:	RSCO UG/KG	SGB-30 10 to 11 UG/KG	SGB-31-3.5 3.5 UG/KG	SGB-32-3 3 UG/KG	SGB-33-3 3 UG/KG	SGB-34-3.5 3.5 UG/KG	SGB-35-3 3 UG/KG	SGB-36-2 2 UG/KG	SGB-37-2.5RE 2.5 UG/KG	SGB-38-2 2 UG/KG	SGB-39-2.5 2.5 UG/KG	APS-1-2.5 2.5 UG/KG	APS-2-2.5 2.5 UG/KG	APS-3-3.5 3.5 UG/KG
Detected Compound														
Tetrachloroethene	1400	74 U	6 J	11 U	11 U	12 U	11 U	11 U	R	66	11 U	11 U	11 U	1 J
Trichloroethene	700	74 U	11 U	11 U	11 U	12 U	11 U	11 U	R	29	11 U	11 U	11 U	11 U
1,2-Dichloroethene(Total)	300 ⁶	74 U	11 U	11 U	11 U	12 U	11 U	11 U	R	48	11 U	11 U	11 U	3 J
Vinyl chloride	120	74 U	11 U	11 U	11 U	12 U	11 U	11 U	R	11 U	11 U	11 U	11 U	11 U
OTHER DETECTED COMPOUNDS														
Methylene chloride	100	74 U	11 U	11 U	15	12 U	11 U	11 U	21 U	11 U	11 U	11 U	11 U	11 U
Acetone	200	140 U	11 U	11 U	94 J	12 U	11 U	32 U	R	11 U	11 U	24 U	11 U	16 U
2-Butanone	300	74	11 U	11 U	26 J	12 U	11 U	11 U	R	11 U	11 U	11 U	11 U	11 U
1,1,1-Trichloroethane	800	74 U	11 U	11 U	11 U	12 U	11 U	11 U	R	2 J	11 U	11 U	11 U	11 U
Benzene	60	74 U	11 U	11 U	11 U	12 U	11 U	11 U	2 J	11 U	11 U	11 U	11 U	11 U
Toluene	1500	74 U	11 U	11 U	11 U	12 U	11 U	11 U	R	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	5500	400	11 U	11 U	11 U	12 U	11 U	11 U	R	11 U	11 U	11 U	11 U	11 U
Xylenes (Total)	1200	* 3300	11 U	11 U	11 U	12 U	11 U	11 U	R	11 U	11 U	4 J	11 U	11 U

SUMMARY OF SVOC TESTING ON SOIL SAMPLES

(NYSDEC Phase I Soil Investigation)

Sample ID: Units of Measure: Compound Description	RSCO UG/KG	SGB-7-2 UG/KG	SGB-21-2 UG/KG	SGB-22-3 UG/KG	SGB-22-3R UG/KG	SGB-23-3R UG/KG	SGB-30 UG/KG
1,2,4-Trichlorobenzene		350 U	1,900	420 U	13,000 UJ	350 U	480 U
Naphthalene	1,300	330 J	340 U	420 U	1,300 J	350 U	190 J
2-Methylnaphthalene	36,400	350 U	56 J	420 U	3,100 J	350 U	120 J
Acenaphthene	50,000	350 U	93 J	420 U	13,000 UJ	350 U	480 U
Fluorene	50	350 U	340 U	420 U	1,900 J	350 U	480 U
Pentachlorophenol	1,000	51 J	860 U	1,100 U	1,800 J	880 U	1,200 U
Phenanthrene	50,000	350 U	94 J	420 U	2,500 J	350 U	77 J
Anthracene	50,000	350 U	140 J	420 U	13,000 UJ	350 U	480 U
Di-n-butyl phthalate	8,100	350 U	340 U	420 U	2,200 J	350 U	480 U
Fluoranthene	50,000	350 U	780	420 U	13,000 UJ	350 U	170 J
Pyrene	50,000	350 U	960	420 U	13,000 UJ	350 U	180 J
Butyl benzyl phthalate	50,000	160 J	340 U	420 U	13,000 UJ	350 U	480 U
Benzo(a)anthracene	224	350 U	350	420 U	13,000 UJ	350 U	120 J
Chrysene	400	350 U	380	420 U	13,000 UJ	350 U	160 J
bis(2-Ethylhexyl)phthalate	50,000	750	570	420 U	13,000 UJ	350 U	110 J
Benzo(b)fluoranthene	1,100	350 U	1,000 NJ	420 U	13,000 UJ	350 U	250 NJ
Benzo(k)fluoranthene	1,100	350 U	1,200 NJ	420 U	13,000 UJ	350 U	270 NJ
Benzo(a)pyrene	61	350 U	630	420 U	13,000 UJ	350 U	130 J
Indeno(1,2,3-cd)pyrene	3,200	350 U	310 J	420 U	13,000 UJ	350 U	99 J
Dibenzo(a,h)anthracene		350 U	80 J	420 U	13,000 UJ	350 U	480 U
Benzo(g,h,i)perylene	50,000	350 U	280 J	420 U	13,000 UJ	350 U	87 J

Notes:

1. SGB = Shallow Geoprobe Boring
2. Qualifiers are included in Appendix F
3. "Recommended Soil Cleanup Objective" in NYSDEC Division Technical and Administrative Guidance Memorandum on the Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994 (TAGM 4046).

E 4-3
SUMMARY OF INORGANIC PARAMETERS IN SOIL SAMPLES
(NYSDEC Phase I RI Soil Investigation)

Sample ID: Sample Depth (ft.): Units of Measure: Compound Description	RSCO MG/KG	SGB-7-2 2 MG/KG	SGB-21-2 2 MG/KG	SGB-22-3 3 MG/KG	SGB-22-3R 3 MG/KG	SGB-23-3R 3 MG/KG	SGB-30 10-11 MG/KG
Aluminum		4680 *J	4010 *J	3500	1500 *J	3720 *J	10900
Antimony		0.71 UNJ	0.71 UNJ	0.83 U	5 BNJ	0.7 UNJ	0.97 UNJ
Arsenic	7.5 *	1.8 B	0.93 B	1.1 B	18.4	0.76 U	8.1
Barium	300 *	28.2 B	19.9 B	43.1 BN*J	1330	26.5 B	70.4
Beryllium	0.16 *	0.18 B	0.21 B	0.34 B	0.13 U	0.18 B	0.76 B
Cadmium	1 *	0.09 U	0.09 U	0.63 B	2.2	0.08 U	0.29 B
Calcium		10900	462 B	3550 *J	9450	502 B	1260 B
Chromium	10 *	9.4	7.3	9.6	16.2	7.3	16.3
Cobalt	30 *	3.5 B	2.8 B	2.2 B	1.8 B	3.4 B	5.6 BJ
Copper	25 *	8	5.3 B	24.9 EJ	166	15.2	33 *
Iron	2000 *	7680	4970	4120	24700	6610	12900
Lead	200-500 **	10.7 *J	5 *J	23.1	2940 *J	8.4 *J	81.2
Magnesium		6780	733 B	2670 *J	836 B	1060 B	1550
Manganese		127 *J	34.3 *J	39.4	83.8 *J	105 *J	213
Mercury	0.1 *	0.05 U	0.05 U	0.29 NJ	1.1	0.05 U	0.32
Nickel	13 *	7.1 B	5.7 B	8 B	8.4 B	7 B	10 B
Potassium		424 B	284 B	363 BJ	294 B	376 B	364 BJ
Selenium	2 *	1.1 NJ	0.73 UN	0.96 B	63.8 NJ	0.84 BNJ	2.7 NJ
Silver		0.13 U	0.13 U	0.15 U	0.67 B	0.13 U	0.18 U
Sodium		111 U	110 U	130 U	763 B	109 U	151 U
Thallium		0.84 U	0.83 U	0.99 U	1.1 B	0.83 U	1.5 B
Vanadium	150 *	10.5 B	9 B	9.5 B	12.4 B	8.9 B	20.7
Zinc	20 *	20.8 EJ	16.2 EJ	123 NJ	299 EJ	19.7 EJ	55.9 EJ
Cyanide		0.51 U	0.53 UJ	0.63 U	0.65 U	0.51 U	0.73 U

Notes:

1. SGB = Shallow Geoprobe Borings
2. Qualifiers are defined in Appendix F
3. RSCO = "Recommended Soil Cleanup Objective" in NYSDEC Division Technical and Administrative Guidance Memorandum on the Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994 (TAGM 4046).
4. Blank = No "Recommended Soil Cleanup Objective" or "Eastern USA Background" standard.
5. * = or Site background
6. ** = Background levels for lead very widely. Average levels in undeveloped, rural areas may range from 4-61 mg/kg. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200 - 500 mg/kg.

TABLE 4-5
SUMMARY OF DETECTED VOC COMPOUNDS IN SEDIMENT SAMPLES
(NYSDEC Phase I RI Soil / Sediment Investigation)

Detected Compound	Sample ID: Sample Location: Units of Measure:	Sediment Criteria UG/KG	SED1R upgradient UG/KG	SED2R midstream UG/KG	SED3R downgradient UG/KG
Tetrachloroethene		3.4	13 U	13 U	2100 D
Trichloroethene		8.5	13 U	13 U	100
1,2-Dichloroethene(Total)			13 U	13 U	12 U
Vinyl chloride			13 U	13 U	12 U

Notes:

1. SED = Sediment sample
2. Qualifiers are defined in Appendix F.
3. Results compared to Division of Fish and Wildlife, Technical Guidance for Screening Contaminated Sediments, July, 1994 (NYSDEC Sediment Criteria).
4. All samples retrieved from Glen Cove Creek.
5. Sediment samples had to be resampled on March 14, 1998, due to laboratory interference on the first samples retrieved on February 17, 1998.

Table 4-6
Pall Corporation, Sea Cliff Avenue Facility
Soil Sample Data Summary

All results in ug/kg except as noted.

Parameter	NYSDEC TAGM HWR-94-4046 RSCO's*	SB-1 3'-4' (3/29/99)	SB-1 8.5'-9.5' (3/29/99)	SB-2 3'-4' (3/29/99)	SB-2 9'-10' (3/29/99)	SB-3 3'-4' (3/29/99)	SB-3 9'-10' (3/29/99)	SB-4 3'-4' (3/29/99)	SB-4 9'-10' (3/29/99)	SB-5 3'-4' (3/29/99)	SB-5 8.5'-9.5' (3/29/99)	SB-6 3'-4' (3/29/99)	SB-6 8.5'-9.5' (3/29/99)	SB-7 3'-4' (3/30/99)	SB-7 9'-12' (3/30/99)	SB-8 3'-5' (3/30/99)	SB-8 7'-9' (3/30/99)
Chloromethane	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Bromomethane	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Vinyl Chloride	200	5 J	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	14 JD	<11	<12	<11
Chloroethane	1,900	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Methylene Chloride	100	<12	<13	4 J	2 JB	2 J	3 J	3 J	2 J	4 J	2 J	4 J	4 J	3 J	3 J	4 J	<11
Acetone	200	<12	<13	56	<12	27	<11	19	12	42	<11	92	21	<12	<11	<12	<11
Carbon Disulfide	2,700	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,1-Dichloroethene	400	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,1-Dichloroethane	200	<12	<13	<12	<12	<12	<11	<12	<11	10 J	<11	2 J	<12	3 J	<11	<12	<11
1,2-Dichloroethene (total)	300**	37	4 J	<12	<12	<12	<11	<12	<11	1,000 D	3 J	8 J	1 J	400 D	22	<12	<11
2-Butanone	300	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Chloroform	300	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,2-Dichloroethane	100	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,1,1-Trichloroethane	800	<12	<13	<12	<12	<12	<11	<12	<11	5 J	<11	<14	<12	22	<11	<12	<11
Carbon Tetrachloride	600	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Bromodichloromethane	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,2-Dichloropropane	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
cis-1,3-Dichloropropene	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Trichloroethene	700	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	150	25	<12	<11
Benzene	60	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Dibromochloromethane	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
trans-1,3-Dichloropropene	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
1,1,2-Trichloroethane	NA	<12	2,400 D	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Bromoform	NA	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
4-Methyl-2-Pentanone	1,000	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Tetrachloroethene	1,400	<12	<13	<12	<12	<12	2 J	<12	<11	<14	6 J	<14	<12	730 D	110	15	<11
1,1,2,2-Tetrachloroethane	600	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Toluene	1,500	7 J	160	<12	<12	<12	<11	<12	<11	8 J	<11	27	<12	<12	<11	<12	<11
Chlorobenzene	1,700	<12	<13	<12	<12	<12	<11	<12	<11	<14	<11	<14	<12	<12	<11	<12	<11
Ethylbenzene	5,500	120 D	320 D	<12	<12	<12	<11	<12	<11	8 J	<11	16	<12	<12	<11	<12	<11
Styrene	NA	<12	29 JD	<12	<12	<12	<11	<12	<11	<14	<11	2 J	<12	<12	<11	<12	<11
m/p-Xylene	1,200***	130 D	2,600 D	<12	<12	<12	2 J	<12	<11	30	<11	34	<12	<12	<11	<12	<11
o-Xylene	1,200***	<12	540 D	<12	<12	<12	<11	<12	<11	6 J	<11	44	<12	<12	<11	<12	<11
Total VOCs	10,000	299	6,053	68	2	29	7	22	14	1,113	11	229	26	1,322	160	19	0

Notes:

* Recommended Soil Clean-up Objectives (RSCO's) defined in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, as amended.
** RSCO for trans-1,2-Dichloroethene used.
*** RSCO for total Xylenes used.
NA = Not Available
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
Qualifiers defined in Appendix F

Table 4-7

SB-5 Area Soil Sampling Results
(Samples Collected August 1999)

Parameter	NYSDEC HWR-94-4046 RSCO's	5-SB-1 0'-4' 8/24/99	5-SB-2 0'-4' 8/24/99	5-SB-3 0'-4' 8/24/99	5-SB-4 0'-4' 8/24/99	5-SB-5 0'-4' 8/24/99	5-SB-6 0'-4' 8/24/99	5-SB-7 0'-4' 8/24/99	5-SB-8 0'-4' 8/24/99	5-SB-9 0'-4' 8/24/99	5-SB-10 0'-4' 8/24/99	5-SB-11 0'-4' 8/24/99	5-SB-12 0'-4' 8/24/99	5-SB-13 0'-4' 8/24/99	5-SB-14 0'-4' 8/24/99	SB-15 0'-4' 8/24/99
Chloromethane	NA	<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
Bromomethane	NA	<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
Vinyl Chloride	200	<11	<11	<11	<11	2 J	<12	<11	<12	<10	<11	<11	2 J	<11	<11	17
Chloroethane	1,900	<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
Methylene Chloride	100	2 J	2 J	2 J	2 J	2 J	2 J	2 J	2 J	2 J	3 J	4 J	3 J	3 J	3 J	4 J
1,1-Dichloroethene	400	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	13
1,1-Dichloroethane	200	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	4 J	<5	<5	70
Chloroform	300	<6	<6	<6	<6	<6	<6	<6	<6	<5	1 J	<5	4 J	<5	<5	1 J
1,2-Dichloroethane	100	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
1,1,1-Trichloroethane	800	<6	<6	<6	<6	<6	<6	<6	<6	<5	10	<5	<6	<5	<5	980 E
Carbon Tetrachloride	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	2 J	<5	<6	<5	<5	140
Bromodichloromethane	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
1,2-Dichloropropene	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
cis 1,3-Dichloropropene	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
Trichloroethene	700	<6	<6	<6	<6	<6	4 J	2 J	<6	<5	20	4 J	2 J	9	21	19,000 JD
Benzene	60	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	2 J	<5	<5	<6
Dibromochloromethane	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
trans 1,3-Dichloropropene	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
1,1,2-Trichloroethane	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
Bromoform	NA	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
Tetrachloroethene	1,400	<6	1 J	<6	<6	<6	44	10	2 J	<5	480 D	22	4 J	180 D	10	950,000 D
1,1,2,2-Tetrachloroethane	600	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
Toluene	1,500	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	22	<5	<5	180
Chlorobenzene	1,700	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	<6	<5	<5	<6
Ethylbenzene	5,500	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	4 J	<5	<5	120
Trichlorofluoromethane	NA	<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
2-Chloroethylvinylether	NA	<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
trans-1,2-Dichloroethene	300	<6	<6	<6	<6	<6	<6	<6	<6	<5	<5	<5	4 J	<5	<5	24
1,3-Dichlorobenzene		<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
1,4-Dichlorobenzene		<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
1,2-Dichlorobenzene		<11	<11	<11	<11	<11	<12	<11	<12	<10	<11	<11	<11	<11	<11	<11
m/p-Xylene	1,200	<6	<6	<6	3 J	<6	<6	<6	<6	<5	<5	<5	9	<5	<5	490 E
o-Xylene	1,200	<6	<6	<6	1 J	<6	<6	<6	<6	<5	<5	<5	8	<5	<5	72
cis-1,2-Dichloroethene	300	1 J	2 J	<6	1 J	9	6	7	4 J	<5	25	15	13	6	13	4,100 E
Total VOCs		3	5	2	<6	13	56	21	8	2	541	45	77	198 D	47	975,211 DE
Total TICs		87 J	33 J	ND	ND	11 J	25 J	ND		22 JN	11 JN	12 JN	5,140 J	7 J	ND	1,371 J

Notes:

- * Recommended Soil Clean-up Objectives (RSCO's) defined in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, as amended.
- ** RSCO for trans-1,2-Dichloroethene used.
- *** RSCO for total Xylenes used.
- NA = Not Available
- <## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
- Qualifiers defined in Appendix F

TABLE 4-9
SB-7 AREA SOIL SAMPLE RESULTS (ug/kg)
[Samples Collected August 1999]

Parameter	NYSDEC HWR-94-4046 RSCO's	7-SB-1 0'-4' 8/26/99	7-SB-2 0'-4' 8/26/99	7-SB-3 0'-4' 8/26/99	7-SB-4 0'-4' 8/26/99	7-SB-5 0'-4' 8/26/99	7-SB-6 0'-4' 8/26/99	7-SB-8 0'-4' 8/26/99	7-SB-9 0'-4' 8/26/99	7-SB-10 0'-4' 8/26/99	7-SB-11 0'-4' 8/26/99	7-SB-12 0'-4' 8/26/99	7-SB-13 0'-4' 8/26/99	7-SB-14 0'-4' 8/26/99	7-SB-15 0'-4' 8/26/99	7-SB-16 0'-4' 8/26/99	7-SB-17 0'-4' 8/26/99	7-SB-18 0'-4' 8/26/99	7-SB-19 0'-4' 8/26/99
Chloromethane	NA	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
Bromomethane	NA	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
Vinyl Chloride	200	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	17	<11	<11	<11	<11	<11	<11
Chloroethane	1,900	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
Methylene Chloride	100	2 J	1 J	2 J	<6	1 J	1 J	1 J	4 J	1 J	2 J	3 J	2 J	2 J	2 J	<5	2 J	<5	2 J
1,1-Dichloroethane	400	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	200	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Chloroform	300	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	100	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	800	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	600	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Bromodichloromethane	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,2-Dichloropropene	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
cis 1,3-Dichloropropene	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Trichloroethene	700	<6	<5	1 J	4 J	1 J	2 J	<5	32	2 J	4 J	<5	<6	<5	<5	<5	11	65	1 J
Benzene	60	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Dibromochloromethane	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
trans 1,3-Dichloropropene	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Bromoform	NA	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Tetrachloroethene	1,400	4 JB	4 JB	9 B	22 B	8 B	7 B	6 B	250 B	20 B	13 B	8 B	8 B	4 JB	3 JB	3 JB	27 B	19 B	5 B
1,1,2,2-Tetrachloroethane	600	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Toluene	1,500	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Chlorobenzene	1,700	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Ethylbenzene	5,500	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	NA	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
2-Chloroethylvinylether	NA	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
trans-1,2-Dichloroethene	300	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	1,600	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
1,4-Dichlorobenzene	8,500	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
1,2-Dichlorobenzene	7,900	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
m/p-Xylene	1,200	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
o-Xylene	1,200	<6	<5	<6	<6	<5	<6	<5	<5	<5	<6	<5	<6	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	300	<6	2 J	2 J	22	2 J	<6	<5	20	<5	<6	<5	<6	<5	2 J	<5	20	7	2 J
Total VOCs		6	7	14	48	12	10	7	306	23	19	11	27	6	7	3	60	91	10
Total TICs		6 J	12	10 JN	136 JN	7 JN	ND	6 JN	53 JN	ND	ND	596 J	13 JN	ND	ND	ND	ND	ND	ND

Notes:
* Recommended Soil Clean-up Objectives (RSCO's) defined in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, as amended.
** RSCO for trans-1,2-Dichloroethene used.
*** RSCO for total Xylenes used.
NA = Not Available
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
Qualifiers defined in Appendix F

Table 4-9

SB-1 and SGB-29 Area Soil Sampling Results
(Samples Collected August 1999)

Parameter	NYSDEC HWR-94-4046 RSCO's	5-SB-1 0'-4' 8/24/99	5-SB-2 0'-4' 8/24/99
Chloromethane	NA	<11	<11
Bromomethane	NA	<11	<11
Vinyl Chloride	200	<11	<11
Chloroethane	1,900	<11	<11
Methylene Chloride	100	1 J	1 J
1,1-Dichloroethene	400	<6	<6
1,1-Dichloroethane	200	<6	<6
Chloroform	300	<6	<6
1,2-Dichloroethane	100	<6	<6
1,1,1-Trichloroethane	800	<6	<6
Carbon Tetrachloride	NA	<6	<6
Bromodichloromethane	NA	<6	<6
1,2-Dichloropropene	NA	<6	<6
cis 1,3-Dichloropropene	NA	<6	<6
Trichloroethene	700	3 J	<6
Benzene	60	<6	<6
Dibromochloromethane	NA	<6	<6
trans 1,3-Dichloropropene	NA	<6	<6
1,1,2-Trichloroethane	NA	<6	<6
Bromoform	NA	<6	<6
Tetrachloroethene	1,400	110 B	6 B
1,1,2,2-Tetrachloroethane	600	<6	<6
Toluene	1,500	<6	<6
Chlorobenzene	1,700	<6	<6
Ethylbenzene	5,500	<6	<6
Trichlorofluoromethane	NA	<11	<11
2-Chloroethylvinylether	NA	<11	<11
trans-1,2-Dichloroethene	300	<6	<6
1,3-Dichlorobenzene		<11	<11
1,4-Dichlorobenzene			<11
1,2-Dichlorobenzene		<11	<11
m/p-Xylene	1,200	<6	<6
o-Xylene	1,200	<6	<6
cis-1,2-Dichloroethene	300	1 J	<6 J
Total VOCs		115	7
Total TICs		19 J	147 J

Notes:

* Recommended Soil Clean-up Objectives (RSCO's) defined in NYSDEC TAGM HWR-94-4046, as amended.

** RSCO for trans-1,2-Dichloroethene used.

*** RSCO for total Xylenes used.

NA = Not Available

<## = Compound was analyzed for but not detected.

The ## represents the sample quantitation limit (This is similar to the U flag).

Qualifiers defined in Appendix F

4-10
SUMMARY OF GROUNDWATER AND SURFACE WATER ELEVATIONS
(NYSDEC Phase I RI)

Location	Well Number	Reference Elev. (ft.)	Adjusted Ref. Elev. (ft.)	February 26, 1998		March 11, 1998		March 12, 1998		March 13, 1998		March 19, 1998	
				Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)
Pall Corporation	MW-1P	55.71	87.53	4.32	83.21	5.91	81.62	4.28	83.25	4.38	83.15	3.74	83.79
	MW-2P	54.17	85.99	3.09	82.90	2.89	83.10	3.05	82.94	3.02	82.97	2.33	83.66
	MW-3P	53.54	85.34	3.12	82.22	2.87	82.47	2.80	82.74	2.73	82.61	2.57	82.77
	MW-4P	52.58	84.43	2.94	81.49	1.84	82.59	1.92	82.51	2.06	82.37	See Note 5	
	MW-5P	51.19	83.11	0.94	82.17	0.73	82.38	0.83	82.28	0.96	82.15		
August Thomson Associated Properties	MW-7P	58.42	88.26	3.09	85.17	3.13	85.13	3.17	85.09	3.27	84.99	2.55	85.71
	MW-1A	53.52	85.36	2.81	82.55	2.58	82.78	2.82	82.74	2.84	82.52	2.24	83.12
	MW-2A	50.02	81.85	1.32	80.53	1.18	80.67	1.11	80.74	1.40	80.45	0.62	81.23
	MW-1H	57.89	89.72	6.71	83.01	9.52	80.20	6.69	83.03	6.82	82.90	6.26	83.46
	MW-2H	58.29	90.12	7.17	82.95	6.92	83.20	6.94	83.18	7.24	82.88	7.04	83.08
Pall Corporation	SGB-2p	55.44	87.27	NM	-	3.92	83.35	4.10	83.17	NM	-	3.64	83.63
	SGB-11p	55.91	87.74	NM	-	NM	-	2.87	84.87	NM	-	2.76	84.98
	SGB-13p	55.19	87.02	NM	-	NM	-	3.41	83.61	NM	-	3.21	83.81
	SGB-15p	57.69	89.52	7.12	82.40	NM	-	7.12	82.40	NM	-	6.65	82.87
	SGB-17p	54.61	86.44	NM	-	3.39	83.05	3.44	83.00	NM	-	2.50	83.94
Stream Gauges	SGB-18p	52.57	84.40	2.17	82.23	2.01	82.39	2.22	82.18	NM	-	1.33	83.07
	SGB-26p	53.68	85.51	NM	-	2.62	82.89	2.40	83.11	NM	-	2.27	83.24
	SGB-32p	52.30	84.13	NM	-	1.41	82.72	1.52	82.61	NM	-	1.22	82.91
	SGB-34p	52.39	84.22	NM	-	1.94	82.28	2.03	82.19	NM	-	1.56	82.66
	SG-1	56.40	88.23	3.60	84.63	NM	-	3.64	84.59	NM	-	2.78	85.45
Stream Gauges	SG-2	52.58	84.41	1.24	83.17	NM	-	1.33	83.08	NM	-	0.62	83.79
	SG-3	51.66	83.49	1.24	82.25	NM	-	1.25	82.24	NM	-	0.28	83.21
	SG-4	51.56	83.39	3.91	79.48	NM	-	3.80	79.59	NM	-	3.13	80.26

Notes:

- 1) See Figure No. 2 for Locations.
- 2) Survey information provided by YEC.
- 3) Reference elevation based on the 1929 adjustment of the National Geodetic Vertical Datum. Adjusted elevation referenced to NC Datum based upon 1999 site survey data.
- 4) Depth measurements referenced to the top of the PVC riser for monitoring wells and piezometers, and top of lath for stream gauge locations.
- 5) The well was covered with water due to heavy rainfall event.
- 6) NM = Not Measured.

TABLE 4-11

Groundwater Elevation Gauging Results
(Phase II RI Groundwater Investigation - Shallow Monitoring Wells)

Location	WELL NO.	Top of Casing Elevation (ft) - See Note 2	Depth to Water (ft) - 6/8/99	Groundwater Elevation (ft) 6/8/99	Depth to Water (ft) - 6/24/99	Groundwater Elevation (ft) 6/24/99	Depth to Water (ft) - 1/13/00	Groundwater Elevation (ft) 1/13/00
Pall	MW-1P	87.53	4.90	82.63	5.80	81.73	5.64	81.89
Corp.	MW-2P	85.99	3.64	82.35	4.49	81.5	4.08	81.91
	MW-3P	85.34		NM	4.08	81.26	4.02	81.32
	MW-4P	84.43	2.56	81.87	3.35	81.08	3.98	80.45
	MW-5P	83.11	1.57	81.54	2.30	80.81	NM	
	MW-7P	88.26	3.63	84.63	4.70	83.56	4.67	83.59
	MW-8PS	88.02	4.89	83.13	5.85	82.17	6.09	81.93
	MW-10PS	82.89					2.97	79.92
	MW-11PS						2.38	
	MW-12PS	83.68					2.75	80.93
	MW-13PS	86.95	7.00	79.95	7.45	79.5	4.68	82.27
August	MW-1A	85.36	3.62	81.74	4.02	81.34	3.81	81.55
Thomson	MW-2A	81.85	1.65	80.2	2.40	79.45	1.87	79.98
Associated	MW-1H	89.72	7.15	82.57		NM		
Draperies	MW-2H	90.12	7.51	82.61		NM		
Photocircuits	MW-3			85.3		NM		
Corp.	MW-4			85.42		NM		
	MW-7			85.94		NM		
	MW-9			82.99		NM		
45A Site	MW-2S			84.7		NM		
	MW-3S			82.86		NM		
City of G.C.	MW-1GS	83.11				NM	3.65	79.46
	MW-2GS	80.39				NM	1.24	79.15
	GC-3S					NM		

Notes:

- 1) Survey information for Photocircuits and 45A site wells provided by NYSDEC. Pall & August Thomson wells by Sidney Bowne.
- 2) Original elevation based on the 1929 adjustment of the National Geodetic Vertical Datum.
Adjusted elevation referenced to NC Datum based upon 1999 site survey data.
- 3) Depth measurements referenced to the top of the PVC riser for monitoring wells and piezometers, and top of lath for stream gauge locations.
- 4) NM = Not Measured.

TABLE 4-11

Groundwater Elevation Gauging Results
(Phase II RI Groundwater Investigation - Intermediate Monitoring Wells)

Location	WELL NO.	Top of Casing Elevation (ft) - See Note 2	Depth to Water (ft) - 5/6/99	Groundwater Elevation (ft) 5/6/99	Depth to Water (ft) - 6/24/99	Groundwater Elevation (ft) 6/24/99	Depth to Water (ft) - 1/13/00	Groundwater Elevation (ft) 1/13/00
Pall	MW-1PI	87.64	Not Installed	Not Installed	Not Installed	Not Installed	5.87	81.77
Corp.	MW-4PI	84.68	Not Installed	Not Installed	Not Installed	Not Installed	4.91	79.77
	MW-5PI	83.11	Not Installed	Not Installed	Not Installed	Not Installed	2.13	80.98
	MW-6PI	88.50	Not Installed	Not Installed	Not Installed	Not Installed	5.12	83.38
	MW-10PI	83.26	Not Installed	Not Installed	Not Installed	Not Installed	3.10	80.16
	MW-11PI		Not Installed	Not Installed	Not Installed	Not Installed	2.82	
	MW-12PI	84.08	Not Installed	Not Installed	Not Installed	Not Installed	3.73	80.35
	MW-13PI	86.93	Not Installed	Not Installed	Not Installed	Not Installed	4.48	82.45
	MW-16PI	89.66	Not Installed	Not Installed	Not Installed	Not Installed	8.07	81.59
August Thom.	MW-2AI	82.26	Not Installed	Not Installed	Not Installed	Not Installed	2.33	79.93
Photocircuits	?							
Corp.	?							
	?							
	?							
45A Site	?							
	?							
City of G.C.	MW-1GI	83.20	Not Installed	Not Installed	Not Installed	Not Installed	3.16	80.04
	MW-2GI	80.57	Not Installed	Not Installed	Not Installed	Not Installed	0.67	79.90
	GC-3I							

Notes:

- 1) Survey information for Photocircuits and 45A site wells provided by NYSDEC. Pall & August Thomsen wells by Sidney Bowne.
- 2) Original elevation based on the 1929 adjustment of the National Geodetic Vertical Datum.
Adjusted elevation referenced to NC Datum based upon 1999 site survey data.
- 3) Depth measurements referenced to the top of the PVC riser for monitoring wells and piezometers, and top of lath for stream gauge locations.
- 4) NM = Not Measured.

TABLE 4-12

SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES

(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.)	Class GA Standards	DGB-1A 8-12	DGB-1B 23-27	DGB-1C 38-42	DGB-1D 46-50	DGB-2A 6-10	DGB-3A 8-12	DGB-3B 23-27	DGB-3C 38-42	DGB-4A 8-12	DGB-4B 23-27	DGB-4C 38-42	DGB-4E 47-51	DGB5A 6-10	DGB-5B 23-27	DGB-5C 38-42	DGB-6A 9-13
Detected Compound Units of Measure:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Tetrachloroethene	5	10 U	10 U	40	15	50 U	10 U	10 U	10 U	10 U	140	10 U	10 U	10 U	30	36	190
Trichloroethene	5	10 U	10 U	85	39	50 U	2 J	1 J	23	10 U	73	42	52	10 U	6 J	21	40
1,2-Dichloroethene (Total)	5 *	1 J	10 U	70	45	50 U	10 U	10 U	18	10 U	380	130	140	2 J	21 J	48	48
Vinyl chloride	2	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25	43	12	10 U	10 U	1 J	5 J
OTHER DETECTED VOCS																	
Bromomethane	5	10 U	10 U	1 J	10 U	50 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride		10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25 U	1 J	10 U	10 U	10 U	10 U	10 U
Acetone	50 (GV)	10 U	10 UJ	8 J	10 U	50 UJ	9 J	10 UJ	28 J	10 UJ	25 U	10 U	10 U	100	10 U	10 UJ	10 U
1,1-Dichloroethene	5	10 U	10 U	2 J	2 J	50 U	10 U	10 U	10 U	10 U	17 J	14	4 J	10 UJ	10 U	2 J	2 J
1,1-Dichloroethane	5	10 U	10 U	6 J	11	50 U	10 U	10 U	10 U	10 U	390	30	28	10 U	28	34	13
Chloroform	7	10 U	10 U	10 UJ	10 U	50 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	5	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	3 J	10 J	9 J	10 U	10 U	10 U	10 U
2-Butanone	50 (GV)	10 UJ	10 UJ	10 UJ	10 U	50 UJ	10 UJ	10 UJ	45 J	10 UJ	25 U	10 U	10 U	10 U	10 U	10 UJ	10 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	1 J	50 U	10 U	10 U	10 U	10 U	13 J	10 U	10 U	10 U	10 U	10 U	2 J
1,2-Dichloropropane	5	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25 U	6 J	2 J	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	5	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	0.7	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25 U	7 J	2 J	10 U	10 U	10 U	10 U
Toluene	5	10 U	10 U	10 UJ	10 U	7 J	10 U	10 U	10 U	10 U	25 U	1 J	2 J	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	330	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes (Total)	5	10 U	10 U	10 U	10 U	820	10 U	10 U	10 U	10 U	25 U	10 U	1 J	10 U	10 U	10 U	10 U

Notes:

1. DGB = Deep Geoprobe Boring

2. SGB = Shallow Geoprobe Boring

3. IGW = In-situ groundwater sample

4. Qualifiers defined in Appendix F.

5. Results compared to 6NYCRR Part 703 (Surface Water Class C and Groundwater Quality Class GA Standards) and/or upgradient background concentrations.

6. * = Class GA Standard applies to oth principal organic contaminant class compounds cis-1,2 Dichloroethene at 5 ug/l and trans-1,2 Dichloroethene at 5 ug/l.

7. GV = Guidance Value. Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values.

TABLE 4-12

SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES

(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.)	Class GA Standards	DGB-6B 23-27	DGB-6C 35-39	DGB7A 8-12	DGB7B 23-27	DGB7C 38-42	DGB-8A 8-12	DGB-8B 23-27	DGB-8C 38-42	IGW-1 9-13 SGB-1	SGB-2A 8-12	SGB-2C 38-42	SGB-3A 8-12	SGB-3C 38-42	SGB-4A 8-12	SGB-4C 38-42	SGB-5A 6-10
Detected Compound Units of Measure:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Tetrachloroethene	5	1300	58 U	100 U	10 U	52	10 U	6 J	36	10 U	10 U	68	6 J	37	10 U	80	10 U
Trichloroethene	5	130	310	100	11	2 J	10 U	14	81	10 U	10 U	93	41	140	5 J	950	10 U
1,2-Dichloroethene(Total)	5 *	100	300	4700 D	1400 D	13	10 U	25	120	10 U	10 U	49	45	300 D	14	360	10 U
Vinyl chloride	2	100 U	50 U	230	96	10 U	10 U	10 U	10 U	10 U	10 U	10 U	4 J	17 J	10 U	67 UJ	10 U
OTHER DETECTED VOCS																	
Bromomethane	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
Chloroethane	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 UJ	10 U	67 UJ	10 U
Methylene chloride		100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
Acetone	50 (GV)	100 U	50 U	71 U	10 U	10 U	10 UJ	10 UJ	10 UJ	7 J	10 UJ	30 J	10 UJ	10 UJ	6 J	67 UJ	10 UJ
1,1-Dichloroethene	5	100 UJ	51 J	16 J	5 J	10 U	10 U	2 J	4 J	10 U	10 U	10 U	3 J	14	1 J	12 J	10 U
1,1-Dichloroethane	5	69 J	21 J	21 J	8 J	2 J	10 U	8 J	10	10 U	10 U	7 J	6 J	91	4 J	23 J	10 U
Chloroform	7	100 U	50 U	71 U	10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
1,2-Dichloroethane	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	8 J	10 U	67 U	10 U
2-Butanone	50 (GV)	100 U	50 U	71 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 UJ	10 UJ	10 U	10 U	10 UJ	67 U	10 UJ
1,1,1-Trichloroethane	5	100 U	37 J	71 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U	10 U	6 J	5 J	10 U	11 J	10 U
1,2-Dichloropropane	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
1,1,2-Trichloroethane	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3 J	10 U	67 U	10 U
Benzene	0.7	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	10 U	67 U	2 J
Toluene	5	100 U	50 U	71 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	4 J
Chlorobenzene	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
Ethylbenzene	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	10 U
Xylenes (Total)	5	100 U	50 U	71 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	67 U	18

TABLE 4-12

SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES

(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.)	Class GA Standards	SGB-5B 23-27	SGB-5C 38-42	SGB-5E 50-54	IGW-6 9-13 SGB-6	SGB-7A 8-12	SGB-7C 38-42	SGB-8A 8-12	SGB-8C 38-42	SGB-9A 8-12	SGB-9C 38-42	SGB-10A 8-12	SGB-10C 38-42	SGB-11A 8-12	SGB-11C 38-42	SGB-12A 8-12	SGB-12C 38-42
Detected Compound Units of Measure:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Tetrachloroethene	5	10 U	10 U	10 U	10 U	10 U	3 J	10 U	4 J	4 J	4 J	9 J	2 J	10 U	14	6 J	130
Trichloroethene	5	10 U	78	16	10 U	10 U	2 J	2 J	12	10 U	14	4 J	4 J	10 U	22	1 J	8 J
1,2-Dichloroethene(Total)	5 *	11	81	53	10 U	1 J	3 J	40	16	1 J	4 J	8 J	2 J	10 U	44	10 U	2 J
Vinyl chloride	2	3 J	2 J	10 U	10 U	10 UJ	10 UJ	16	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	2 J	10 UJ	10 UJ
OTHER DETECTED VOCS																	
Bromomethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 UJ
Chloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50 (GV)	10 UJ	5 J	10 U	10 U	10 UJ	10 UJ	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	11 J	10 UJ	10 UJ	10 U
1,1-Dichloroethene	5	10 U	3 J	6 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 J	10 U	10 U
1,1-Dichloroethane	5	2 J	6 J	6 J	10 U	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U	2 J	5 J	10 U	10 U
Chloroform	7	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	50 (GV)	10 UJ	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 U	10 UJ
1,1,1-Trichloroethane	5	10 U	8 J	18	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	14	10 U	2 J
1,2-Dichloropropane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	0.7	10 U	10 U	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	5	1 J	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	22	5 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylenes (Total)	5	1 J	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 4-12
SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES
(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.)	Class GA Standards	SGB-13A 8-12	SGB-13C 38-42	SGB-14A 8-12	SGB-14C 32-36	IGW-15 9-13 SGB-15 UG/L	SGB-16A 8-12	SGB-16C 38-42	SGB-17A 8-12	SGB-17B 23-27	SGB-17C 38-42	SGB-17D 47-51	SGB-17E 57-61	IGW-18 5-9 SGB-18 UG/L	IGW-19 6-10 SGB-19 UG/L	SGB-20A 8-12	SGB-20C 38-42
Detected Compound	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Tetrachloroethene	5	10 U	9 J	10 U	130	10 U	210	370	5 J	10 U	8 J	920 D	66	10 U	10 U	1 J	440
Trichloroethene	5	10 U	57	10 U	110	10 U	24	100	27	3 J	6 J	120	79	12	10 U	2 J	52
1,2-Dichloroethene(Total)	5 *	10 U	120	10 U	290	2 J	22	85	77	9 J	5 J	74	91	95	10 U	37	47
Vinyl chloride	2	10 U	34	10 U	9 J	10 U	20 UJ	33 UJ	40	10 U	10 U	10 U	10 U	10 U	12	14	33 U
OTHER DETECTED VOCS																	
Bromomethane	5	10 U	10 U	10 U	17 U	10 U	20 UJ	33 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Chloroethane	5	10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Methylene chloride		10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Acetone	50 (GV)	10 UJ	10 UJ	10 U	17 U	10 U	20 U	33 U	10 J	16 J	1100 DJ	120 J	120 J	10 U	10 U	10 UJ	220 J
1,1-Dichloroethene	5	10 U	13	10 U	10 J	10 U	20 U	33 U	1 J	10 U	10 U	2 J	2 J	10 U	10 U	10 U	33 U
1,1-Dichloroethane	5	10 U	24	10 U	230	10 U	20 U	33 U	7 J	2 J	2 J	10 U	9 J	10 U	2 J	6 J	15 J
Chloroform	7	10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	1 J	10 U	10 U	10 U	33 U
1,2-Dichloroethane	5	10 U	9 J	10 U	2 J	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
2-Butanone	50 (GV)	10 UJ	10 UJ	10 U	17 U	10 U	20 UJ	33 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U	10 U	33 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	4 J	10 U	20 U	33 U	2 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
1,2-Dichloropropane	5	10 U	4 J	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
1,1,2-Trichloroethane	5	10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	22	10 U	10 U	10 U	10 U	33 U
Benzene	0.7	10 U	7 J	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Toluene	5	10 U	10 U	10 U	17 U	2 J	20 U	33 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	1 J	33 U
Chlorobenzene	5	10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Ethylbenzene	5	10 U	10 U	10 U	17 U	10 U	20 U	33 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U
Xylenes (Total)	5	10 U	10 U	10 U	17 U	10 U	20 U	33 U	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	33 U

TABLE 4-12

SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES

(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.) Detected Compound	Class GA Standards UG/L	SGB-21A 8-12 UG/L	SGB-21D 38-42 UG/L	SGB-22A 8-12 UG/L	SGB-22C 38-42 UG/L	SGB-23A 8-12 UG/L	SGB-23C 38-42 UG/L	SGB-24A 8-12 UG/L	SGB-25B 23-27 UG/L	SGB-25C 38-42 UG/L	SGB-25D 47-51 UG/L	SGB-26A 8-12 UG/L	SGB-26C 38-42 UG/L	IGW-27 12-16 UG/L	IGW-29 5-9 UG/L	IGW-30 11-15 UG/L	SGB-31A 8-12 UG/L
Tetrachloroethene	5	3300 U	1700	140 J	240 D	10 U	50	10 U	9 J	730 D	92	10 U	53	10 U	59000 D	2500	33 U
Trichloroethene	5	3300 U	140	1500	94	10 U	41	10 U	6 J	95	96	3 J	28	5 J	9600 D	1100	33 U
1,2-Dichloroethene(Total)	5 *	360 J	16 J	7100	120	1 J	140	4 J	30	21	140	50	120	6 J	12000 D	9400	310
Vinyl chloride	2	3300 UJ	100 U	300 J	16	3 J	14 J	2 J	10 U	10 U	14	16	12 J	10 U	690 D	390 J	58
OTHER DETECTED VOCs																	
Bromomethane	5	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
Chloroethane	5	3300 U	100 U	500 U	9 J	10 U	8 J	3 J	10 U	10 U	6 J	10 U	4 J	10 U	10 U	500 U	33 U
Methylene chloride		3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
Acetone	50 (GV)	16000 J	100 UJ	500 UJ	10 UJ	10 UJ	20 UJ	10 U	10 U	10 U	10 U	10 UJ	20 UJ	10 U	16	500 U	33 U
1,1-Dichloroethene	5	3300 U	100 U	500 U	5 J	10 U	7 J	10 U	10 U	10 U	9 J	10 U	5 J	10 U	18	500 UJ	33 U
1,1-Dichloroethane	5	3300 U	100 U	100 J	140	10 U	220	6 J	47	23	83	10 U	260	10 U	10 U	500 U	20 J
Chloroform	7	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
1,2-Dichloroethane	5	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	1 J	10 U	20 U	10 U	10 U	500 U	33 U
2-Butanone	50 (GV)	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
1,1,1-Trichloroethane	5	3300 U	100 U	500 U	10 U	10 U	6 J	10 U	10 U	2 J	5 J	10 U	4 J	10 U	10 U	500 U	33 U
1,2-Dichloropropane	5	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
1,1,2-Trichloroethane	5	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	500 U	33 U
Benzene	0.7	3300 U	100 U	500 U	10 U	1 J	20 U	1 J	10 U	10 U	10 U	10 U	20 U	10 U	2 J	500 U	33 U
Toluene	5	3300 U	100 U	500 U	10 U	1 J	20 U	7 J	10 U	10 U	10 U	10 U	20 U	10 U	11	500 U	33 U
Chlorobenzene	5	3300 U	100 U	500 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	2 J	500 U	33 U
Ethylbenzene	5	3300 U	100 U	500 U	10 U	4 J	20 U	10 U	10 U	10 U	10 U	10 U	20 U	10 U	160	500 U	33 U
Xylenes (Total)	5	3300 U	100 U	500 U	10 U	23	3 J	6 J	10 U	10 U	10 U	10 U	20 U	10 U	410	500 U	33 U

TABLE 4-12
SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES
(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.) Units of Measure:	Class GA Standards UG/L	SGB-31C 38-42 UG/L	SGB-32A 8-12 UG/L	SGB-32C 38-42 UG/L	SGB-33A 8-12 UG/L	SGB-33B 23-27 UG/L	SGB-33C 38-42 UG/L	SGB-33E 64-68 UG/L	SGB-34A 8-12 UG/L	SGB-34C 38-42 UG/L	SGB-35A 8-12 UG/L	SGB-35B 23-27 UG/L	SGB-35C 38-42 UG/L	SGB-36A 8-12 UG/L	SGB-36D Dup of SGB-36A UG/L	SGB-36B 23-27 UG/L	SGB-36C 38-42 UG/L
Tetrachloroethene	5	54	10 U	36	1000 U	2500 U	23	72	8 J	58	140000	140 D	86	170 U	34 J	3 J	2 J
Trichloroethene	5	30	10 U	16	1000 U	2500 U	13	110	17 J	21	1500 J	42	7 J	170 U	510	44	1 J
1,2-Dichloroethene (Total)	5 *	20	2 J	30	8300	15000	150	130	220	99	10000 J	130	67	2400	2000	190	5 J
Vinyl chloride	2	10 U	10 U	10 U	400 J	480 J	5 J	7 J	16 J	10 U	12000 U	9 J	6 J	190	110 J	11	10 U
OTHER DETECTED VOCS																	
Bromomethane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Chloroethane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Methylene chloride		10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Acetone	50 (GV)	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	12 J	170 U	380 J	28 J	7 J
1,1-Dichloroethene	5	1 J	10 U	10 U	1000 U	2500 U	1 J	15	31 U	3 J	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
1,1-Dichloroethane	5	4 J	1 J	21	1000 U	2500 U	48	16	5 J	150	12000 U	2 J	8 J	170 U	140 U	10 U	10 U
Chloroform	7	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
1,2-Dichloroethane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	1 J	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
2-Butanone	50 (GV)	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
1,1,1-Trichloroethane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	4 J	31 U	4 J	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
1,2-Dichloropropane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	2 J	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
1,1,2-Trichloroethane	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Benzene	0.7	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Toluene	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	1 J	10 U	170 U	140 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Ethylbenzene	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	10 U	10 U	170 U	140 U	10 U	10 U
Xylenes (Total)	5	10 U	10 U	10 U	1000 U	2500 U	10 U	10 U	31 U	10 U	12000 U	1 J	3 J	170 U	140 U	10 U	10 U

TABLE 4-12

SUMMARY OF DETECTED VOC COMPOUNDS IN GEOPROBE GROUNDWATER SAMPLES

(NYSDEC Phase I RI Groundwater Investigation)

Sample ID: Sample Depth (ft.)	Class GA Standards	SGB-37A 8-12	SGB-37C 38-42	SGB-38A 8-12	SGB-38C 38-42	SGB-39A 8-12	SGB-39C 38-42	APW-1 8-12	APW-DUP Dup of APW-1	APW-2 8-12	APW-3 8-12
Detected Compound Units of Measure:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Tetrachloroethene	5	10 U	17 J	1000	220	2 J	50	10 U	10 U	21	710
Trichloroethene	5	1 J	43	1400	19 J	10 U	26	2 J	1 J	25	68
1,2-Dichloroethene(Total)	5 *	10 U	300	15000 D	45	10 U	85	8 J	7 J	25	170
Vinyl chloride	2	10 U	10 J	1000	25 U	10 U	6 J	10 U	10 U	10	50 U
OTHER DETECTED VOCS											
Bromomethane	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Chloroethane	5	10 U	25 U	500 U	25 U	10 U	2 J	10 U	10 U	10 U	50 U
Methylene chloride		10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Acetone	50 (GV)	10 U	25 U	1400 J	25 U	10 U	10 U	10 U	10 U	10 U	50 U
1,1-Dichloroethene	5	10 U	10 J	500 U	25 U	10 U	3 J	10 U	10 U	10 U	50 U
1,1-Dichloroethane	5	10 U	120	98 J	5 J	10 U	150	1 J	10 U	2 J	50 U
Chloroform	7	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
1,2-Dichloroethane	5	10 U	11 J	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
2-Butanone	50 (GV)	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
1,1,1-Trichloroethane	5	2 J	4 J	96 J	25 U	10 U	2 J	10 U	10 U	10 U	50 U
1,2-Dichloropropane	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
1,1,2-Trichloroethane	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Benzene	0.7	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Toluene	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Chlorobenzene	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Ethylbenzene	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U
Xylenes (Total)	5	10 U	25 U	500 U	25 U	10 U	10 U	10 U	10 U	10 U	50 U

TABLE 4-13
SUMMARY OF TRICHLOROTRIFLUOROETHANE TIC READINGS
(NYSDEC PHASE I RI GROUNDWATER SUMMARY)

Sample ID	Sample Depth (ft)	Concentration (µg/l)
Surface Water Samples		
SW-3	NA	25 J
Deep Geoprobe Borings		
DGB-3A	8-12	10 J
DGB-5B	23-27	26 J
DGB-6A	9-13	1,500 J
DGB-7A	8-12	1,600 J
DGB-7B	23-27	14 J
DGB-7C	38-42	17 J
Shallow Geoprobe Borings		
SGB-2C	38-42	385 J
SGB-12A	8-12	35 J
SGB-16A	8-12	29 J
SGB-16C	38-42	24 J
SGB-17B	23-27	82 J
SGB-17C	38-42	6,102 J
SGB-17D	47-51	813 J
SGB-17E	57-61	549 J
SGB-20C	38-42	3,115 J
SGB-20D	38-42	3,018 J
SGB-21A	8-12	150,480 J
SGB-21D	38-42	285 J
SGB-33A	8-12	5,534 J
SGB-33B	23-27	3,198 J
SGB-33C	38-42	42 J
SGB-35B	23-27	18
SGB-35C	38-42	54
SGB-36A	8-12	282
SGB-36B	23-27	342
SGB-36C	38-42	80
SGB-36D	8-12	4,248
SGB-38A	8-12	787 J
SGB-38C	38-42	218 J
Monitoring Wells		
MW-2A	5-15'	241 J
MW-4P	14-24'	19 NJ
MW-5P	4-14'	1,481 NJ
Auger Probe Borings		
APW-3	8-12	267

Note:

1. Qualifiers defined in Appendix F

Table based upon data originally presented by the NYSDEC in 'Focused Remedial Investigation Data Report', April 1999

Table 4-14
Pall Corp / August Thomsen Site Monitoring Well Data

Well ID	Location	Approximate Installation Date	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Total Well Depth (ft)	Screened Interval (ft)	Comments
MW-1P	Pall Corporation	01/21/1992	87.99	87.53	15	5-15	Cover Missing
MW-1PI	Pall Corporation	03/10/1999	87.89	87.64	55	41 - 51	
MW-1PD	Pall Corporation	03/11/1999	87.74	87.42	105	90 - 100	
MW-2P	Pall Corporation	01/22/1992	86.54	85.99	14	4-14	Cover Missing
MW-3P	Pall Corporation	01/21/1992	85.72	85.34	14	3-14	
MW-4P	Pall Corporation	01/20/1992	84.89	84.43	23	13-23	
MW-4PI	Pall Corporation	03/12/1999	84.93	84.68	55	45 - 55	
MW-4PD	Pall Corporation	03/16/1999	84.97	84.75	105	91 - 101	
MW-5P	Pall Corporation	01/20/1992	83.50	83.11	13	3-13	Cover Missing
MW-5PI	Pall Corporation	03/17/1999	83.53	83.11	55	40 - 50	
MW-5PD	Pall Corporation	03/17/1999	83.66	83.29	105	90 - 100	
MW-6P	Pall Corporation	08/14/1992	88.78	88.50	60	50-60	
MW-7P	Pall Corporation	11/18/1996	88.88	88.26	18	3-18	
MW-6PD	Pall Corporation	03/09/1999	89.57	89.19	105	90 - 100	
MW-8PS	Pall Corporation	03/25/1999	88.51	88.28	15	5 - 15	
MW-8PI	Pall Corporation	03/25/1999	88.45	88.02	55	40 - 50	
MW-10PS	Pall Corporation	03/19/1999	83.29	82.89	15	5 - 15	
MW-10PI	Pall Corporation	03/19/1999	83.59	83.26	55	40 - 50	
MW-10PD	Pall Corporation	03/22/1999	84.31	83.79	100	90 - 100	
MW-11PS	Pall Corporation	08/17/1999	83.54	83.12	15	5 - 15	
MW-11PI	Pall Corporation	08/17/1999	83.23	83.03	50	40 - 50	
MW-11PD	Pall Corporation	08/16/1999	83.64	83.29	95	85 - 95	
MW-13PS	Pall Corporation	09/19/1999	87.16	86.95	15	5-15	
MW-13PI	Pall Corporation	08/19/1999	87.23	86.93	50	40 - 50	
MW-13PD	Pall Corporation	08/18/1999	87.32	87.06	95	85 - 95	
MW-14PCD	Sea Cliff Avenue	01/04/2000	90.54	90.08	95	85 - 95	
MW-15PCD	Sea Cliff Avenue	02/22/2000	88.16	87.89	100	90 - 100	
MW-16PCI	Sea Cliff Avenue	01/06/2000	89.99	89.66	60	40 - 50	
MW-16PCD	Sea Cliff Avenue	01/06/2000	89.91	89.65	95	85 - 95	
MW-1A	August Thomsen		86.08	85.36	13		
MW-2A	August Thomsen		82.66	81.85	13		
MW-2AI	August Thomsen	03/23/1999	82.65	82.26	55	40 - 50	
MW-2AD	August Thomsen	03/22/1999	82.69	82.35	105	80 - 90	
MW-12PS	August Thomsen	08/23/1999	84.11	83.68	15	5 - 15	
MW-12PI	August Thomsen	08/23/1999	84.26	84.08	50	40 - 50	
MW-12PD	August Thomsen	08/20/1999	84.34	84.10	100	85 - 95	
MW-1GS	City of Glen Cove	01/17/2000	83.53	83.11	15	5-15	
MW-1GI	City of Glen Cove	01/18/2000	83.60	83.20	50	40-50	
MW-1GD	City of Glen Cove	01/18/2000	83.66	83.35	95	85-95	
MW-2GS	City of Glen Cove	09/07/1999	80.85	80.39	15	5-15	
MW-2GI	City of Glen Cove	09/07/1999	80.94	80.57	50	40 - 50	
MW-2GD	City of Glen Cove	09/08/1999		80.56	100	90 - 100	
MW-1H	Associated Draperies	Not Provided	90.37	89.72	27		
MW-2H	Associated Draperies	Not Provided	90.36	90.12	27		

Table 4-15
Groundwater Sample Results - Shallow Groundwater Monitoring Wells
(Samples collected 4/99)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	Monitoring Wells									
		MW-1A (4/6/99)	MW-1P (4/5/99)	MW-2A (4/2/99)	MW-2P (4/6/99)	MW-3P (4/6/99)	MW-4P (4/2/99)	MW-5P (4/1/99)	MW-7P (4/6/99)	MW-8PS (4/5/99)	MW-10PS (4/1/99)
Chloromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	26	<10	<10	9 J	50	170	250 D	<10	<10	190 D
Chloroethane	5*	<10	<10	<10	<10	1 J	<10	3 J	<10	<10	1 J
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	<5	<5	<5	<5	9	<5	<5	12
1,1-Dichloroethane	5	1 J	<5	2 J	<5	14	17	20	<5	<5	17
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	5	<5	<5	1 J	<5	<5	<5	3 J	<5	<5	1 J
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	12	<5	13	2 J	2 J	4 J	230 D	<5	1 J	120
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	1 J
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	10	<5	200 E	<5	<5	1 J	110 D	<5	2 J	51
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	1 J	5	8	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5 J
Ethylbenzene	5	<5	<5	<5	<5	<5	2 J	2 J	<5	<5	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	<5	<5	<5	<5	3 J	5 J	57	<5	<5	25
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
m/p-Xylene	5	<5	<5	<5	<5	<5	2 J	3 J	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	2 J	5 J	<5	<5	<5
cis-1,2-Dichloroethene	5	22	<5	6	27	82	350 E	3,600 ED	<5	10	2,100 ED
Total TICs	NA	34 JN	0	500 JN	0	45 JN	158 JN	540 IND	0	0	278 JN
Total VOCs	NA	71	0	222	38	153	558	4,300	0	18	2,523

Notes:

"Shallow" groundwater is defined as wells screened in the interval from the top of the water table to a maximum of 15 feet into the water table.
TICs = Tentatively Identified Compounds
NA = Not Available
Total VOCs does not include TICs
<## = Compound was not analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
* Indicates a guidance value, not a standard.
Qualifiers defined in Appendix F

Table 4-16
Groundwater Sample Results - Intermediate Groundwater Monitoring Wells
(Samples collected 4/99)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	Monitoring Wells						
		MW-1PI (4/5/99)	MW-2A1 (4/2/99)	MW-4PI (4/2/99)	MW-5PI (4/1/99)	MW-6PI (4/6/99)	MW-8PI (4/6/99)	MW-10PI (4/1/99)
Chloromethane	5	<10	1 J	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	20	6 J	68	14	4 J
Chloroethane	5*	<10	<10	<10	<10	1 J	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	2 J	43	<5	2 J	26	18	5 J
1,1-Dichloroethane	5	8	20	6	28	82	28	42
Chloroform	7	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	1 J	<5	<5	22	4 J	<5
1,1,1-Trichloroethane	5	<5	36	<5	2 J	<5	10	4 J
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	47	250 D	8	27	150	49	26
Benzene	1	<5	<5	<5	<5	4 J	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	1 J	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	26	60	51	38	51	20	38
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	3 J	2 J	1 J	1 J	2 J	10
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	2 J	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10
2-Chlorovinyl/ethylether	NA	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	<5	<5	<5	<5	4 J	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	1 J	<10	<10	<10	<10
m/p-Xylene	5	<5	<5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	5	59	200 D	30	92	920 E	96	52
Total TICs	NA	16 JN	0	605 JN	21 JN	45 JN	9 JN	0
Total VOCs	NA	142	614	118	196	1,330	243	181

Notes:

"Intermediate" groundwater is defined as wells screened in the interval of approximately 40 ft. to 50 ft. below grade (about 33 to 43 feet below the top of the water table)

TICs = Tentatively Identified Compounds

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

* Indicates a guidance value, not a standard.

Qualifiers defined in Appendix F

Table 4-17
Groundwater Sample Results - Deep Groundwater Monitoring Wells
(Samples collected 4/99)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	MW-1PD (4/5/99)	MW-2AD (4/2/99)	MW-4PD (4/2/99)	MW-5PD (4/1/99)	MW-6PD (4/6/99)	MW-10PD (4/1/99)
Chloromethane	5	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	26	24	<10
Chloroethane	5*	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	2 J	14	5	21	23	3 J
1,1-Dichloroethane	5	7	6	3 J	18	58	5 J
Chloroform	7	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	12	<5
1,1,1-Trichloroethane	5	<5	14	6	25	6	3 J
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5
Trichloroethene	5	47	140	62	270 D	53	120
Benzene	1	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	4 J	15	10	54	32	8
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	2 J	2 J	30	1 J	6
Chlorobenzene	5	<5	<5	<5	4 J	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	<5	<5	<5	1 J	2 J	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10
m/p-Xylene	5	<5	<5	<5	5 J	<5	<5
o-Xylene	5	<5	<5	<5	1 J	<5	<5
cis-1,2-Dichloroethene	5	75	96	36	240 D	220 E	58
Total TICs	NA	45 JN	0	0	49 J	0	0
Total VOCs	NA	135	287	124	695	431	203

Notes:

"Deep" groundwater is defined as wells screened in the interval of approximately 90 ft. to 100 ft. below grade (about 83 to 93 feet below the top of the water table)

TICs = Tentatively Identified Compounds

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

* Indicates a guidance value, not a standard.

Qualifiers defined in Appendix F

Table 4-18
Groundwater Sample Results - Shallow Groundwater Monitoring Wells
(Samples collected 1/00)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	MW-1A (1/21/00)	MW-1P (1/18/00)	MW-2A (1/14/00)	MW-2P (1/18/00)	MW-3P (1/17/00)	MW-4P (1/17/00)	MW-5P	MW-7P (1/17/00)	MW-8PS (1/18/00)	MW-10PS (1/14/00)	MW-11PS (1/14/00)	MW-12PS (1/17/00)	MW-13PS (1/17/00)
Chloromethane	5	<10	<10	<10	<10	<10	<10	P	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	E	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	50	2 J	<10	<10	2 J	130	N	<10	<10	350 D	16	130	2 J
Chloroethane	5*	<10	<10	<10	<10	<10	<10	D	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	I	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	6	<5	<5	6	N	<5	<5	10	<5	14	2 J
1,1-Dichloroethane	5	<5	3 J	9	<5	20	12	G	<5	<5	16	3 J	10	19
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	<5	<5	<5	<5	3 J	6		<5	<5	22	<5	3 J	2 J
Chloroform	7	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	5	<5	<5	4 J	<5	<5	<5		<5	<5	<5	<5	25	6
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
2-Chlorovinylethyl/ether	NA	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
Trichloroethene	5	4 J	<5	75	8	<5	210		2 J	<5	140	2 J	1,600 D	35
Benzene	1	<5	<5	<5	<5	<5	3 J		<5	<5	<5	3 J	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	6	<5	160	3 J	<5	43		<5	<5	36	<5	470 D	18
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5		<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	4 J		<5	<5	<5	<5	1 J	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5		<5	<5	4 J	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	2 J		<5	<5	<5	<5	<5	<5
m/p-Xylene	5	<5	<5	<5	<5	<5	2 J		<5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	2 J		<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	2 J		<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10		<10	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene	5	<10	<10	61 JN	10 JN	<10	<10		<10	<10	2,500 JN	63 JN	750 JN	51 JN
Total "Freon" TICs	NA	0	0	1,740 JN	0	0	37 JN	0	0	0	1,230 JN	0	2,278 JN	0
Total VOCs	NA	60	5	315	21	25	912	0	2	0	3,078	87	3,006	135

Notes:

"Shallow" groundwater is defined as wells screened in the interval from the top of the water table to a maximum of 15 feet into the water table.
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site.
NA = Not Available
Total VOCs does not include TICs
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
* Indicates a guidance value, not a standard.
ND = Tentatively identified compound that was not detected, Actual MDL not available but likely <10 ug/l based upon similar sample matrices.
Qualifiers defined in Appendix F

Table 4-19
Groundwater Sample Results - Intermediate Groundwater Monitoring Wells
(Samples collected 1/00)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	MW-1PI (1/18/00)	MW-2AI (1/14/00)	MW-4PI (1/17/00)	MW-5PI (1/14/00)	MW-6P (1/17/00)	MW-8PI (1/18/00)	MW-10PI (1/14/00)	MW-11PI (1/14/00)	MW-12PI (1/17/00)	MW-13PI (1/17/00)	MW-16PCI (1/21/00)
Chloromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	3 J	<10	20	38	<10	6 J	11	<10
Chloroethane	5*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	1 J	43	<5	<5	2 J	31	3 J	<5	4 J	16	<5
1,1-Dichloroethane	5	9	51	4 J	18	4 J	49	48	5 J	27	41	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	<5	<5	<5	<5	<5	1 J	4 J	<5	<5	2 J	<5
Chloroform	7	<5	2 J	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	2 J	<5	<5	<5	8	<5	<5	<5	14	<5
1,1,1-Trichloroethane	5	<5	18	<5	1 J	4 J	18	3 J	<5	<5	5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	30	330 D	8	45	9	68	200	14	190 D	69	<5
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	1 J	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	20	51	6	180	4 J	37	590 D	59	1,700 D	15	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
m/p-Xylene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
cis-1,2-Dichloroethene	5	40 JN	370 JN	8 JN	63 JN	14 JN	100 JN	350 JN	9 JN	82 JN	280 JN	<10
Total "Freon" TICs	NA	13 JN	1,740 JN	2,358 JN	47 JN	21	0	347 JN	0	33 JN	0	0
Total VOCs	NA	100	867	26	310	37	332	1,236	87	2,009	454	0

Notes:

"Shallow" groundwater is defined as wells screened in the interval from the top of the water table to a maximum of 15 feet into the water table.
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site.

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

* Indicates a guidance value, not a standard.

ND = Tentatively identified compound that was not detected, Actual MDL not available but likely <10 ug/l based upon similar sample matrices.

Qualifiers defined in Appendix F

Table 4-20
Groundwater Sample Results - Deep Groundwater Monitoring Wells
(Samples collected 1/00)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	MW-1PD (1/18/00)	MW-2AD (1/14/00)	MW-4PD (1/17/00)	MW-5PD (1/14/00)	MW-6PD (1/17/00)	MW-10PD (1/14/00)	MW-11PD (1/14/00)	MW-12PD (1/17/00)	MW-13PD (1/17/00)	MW-14PCD (1/21/00)	MW-15PCD	MW-16PCD (1/21/00)
Chloromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	P	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	E	<10
Vinyl Chloride	2	<10	<10	<10	210 JD	250 D	<10	3 J	<10	<10	59	N	<10
Chloroethane	5*	<10	<10	<10	<10	3 J	<10	<10	<10	<10	<10	D	<10
Methylene Chloride	5	<5	<5	<5	2 J	<5	<5	<5	<5	<5	<5	I	<5
1,1-Dichloroethene	5	<5	<5	50	350 JD	81	16	15	13	12	15	N	2 J
1,1-Dichloroethane	5	<5	2 J	27 J	160	140	12	16	16	15	<10	G	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10
trans-1,2-Dichloroethene	5	<5	<5	2 J	12	12	<5	<5	1 J	<5	<5		<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
1,2-Dichloroethane	0.6	<5	<5	2 J	8	23	<5	<5	<5	1 J	<5		<5
1,1,1-Trichloroethane	5	<5	2 J	44	420 JD	<5	16	20	8	7	5		<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
cis-1-3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
Trichloroethene	5	9	70	930 D	8,700 D	110	490 D	160	580 D	190	7		32
Benzene	1	<5	<5	<5	5 J	7	<5	<5	<5	<5	<5		<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
1,1,2-Trichloroethane	1	<5	<5	<5	4 J	1 J	<5	<5	<5	<5	<5		<5
Bromoform	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
Tetrachloroethene	5	<5	2 J	65	740 JD	24	26	16	17	27	2 J		4 J
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5
m/p-Xylene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	13		<5
o-Xylene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	8		<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10
cis-1,2-Dichloroethene	5	<10 JN	48 JN	450 JN	2,100 JN	1,100 JN	99 JN	110 JN	360 JN	150 JN	86 JN		23 JN
Total "Freon" TICs	NA	6 JN	0	0 JN	35 JN	0	0 JN	6 JN	10 JN	16 JN	0	0	0
Total VOCs	NA	9	124	1,570	12,711	1,751	659	340	995	402	195	0	61

Notes:

"Shallow" groundwater is defined as wells screened in the interval from the top of the water table to a maximum of 15 feet into the water table.
TICs = Tentatively Identified Compounds, 1,2-DCE listed individually as a VOC because of its importance at the site.

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

* Indicates a guidance value, not a standard.

ND = Tentatively identified compound that was not detected. Actual MDL not available but likely <10 ug/l based upon similar sample matrices.

Qualifiers defined in Appendix F

TABLE 4-21
SUMMARY OF DETECTED VOC COMPOUNDS IN SURFACE WATER SAMPLES
(NYSDEC PHASE I RI STUDY)

Sample ID: Units of Measure: Compound	Class C Standards UG/L	SW1 UG/L	SW2 UG/L	SW3 UG/L
Vinyl chloride		10 U	10 U	2 J
1,1-Dichloroethane		10 U	10 U	1 J
Trichloroethene		10 U	10 U	29
Tetrachloroethene		10 U	10 U	77
Methylene chloride		10 U	1 J	10 U
Acetone		19 J	28 J	14 J
1,2-Dichloroethene(Total)		10 U	10 U	28

Notes:

1. SW = Surface Water Sample
2. Qualifiers defined in Appendix F
4. Results compared to 6NYCRR Part 703 (Surface Water Class C Standards).

TABLE 6-1
LIMITED OFF-SITE INVESTIGATION
SOIL SAMPLE RESULTS (uol/kg)

Parameter	NYSDEC HWR-94-4046 RSCOs	SB-42N 1' - 2' Reserved	SB-42S 1' - 2' Reserved	SB-43N 1' - 2' Reserved	SB-43S 1' - 2' Reserved	SB-1 EMS 0'-4' 11/18/99	SB-2 EMS 0'-4' 11/18/99	SB-3 EMS 0'-4' 11/18/99
Chloromethane	NA	<18	<11	<11	<11	<11	<12	<11
Bromomethane	NA	<18	<11	<11	<11	<11	<12	<11
Vinyl Chloride	200	<18	<11	<11	<11	<11	3 J	<11
Chloroethane	1,900	<18	<11	<11	<11	<11	<12	<11
Methylene Chloride	100	8 JB	4 JB	5 JB	4 JB	5 JB	13 B	12 B
Acetone	200	6 JB	<11	2 JB	<11	Not Reported	Not Reported	Not Reported
Carbon Disulfide	NA	<18	<11	<11	<11	Not Reported	Not Reported	Not Reported
1,1-Dichloroethene	400	<18	<11	<11	<11	<6	<6	<5
1,1-Dichloroethane	200	<18	<11	<11	<11	<6	<6	<5
1,2-Dichloroethene (total)	300	8 J	<11	<11	<11	Not Reported	Not Reported	Not Reported
2 - Butanone	NA	<18	<11	<11	<11	Not Reported	Not Reported	Not Reported
Chloroform	300	<18	<11	<11	<11	<6	<6	<5
1,2-Dichloroethane	100	<18	<11	<11	<11	<6	<6	<5
1,1,1-Trichloroethane	800	<18	<11	<11	<11	<6	<6	<5
Carbon Tetrachloride	600	<18	<11	<11	<11	<6	<6	<5
Bromodichloromethane	NA	<18	<11	<11	<11	<6	<6	<5
1,2-Dichloropropane	NA	<18	<11	<11	<11	<6	<6	<5
cis 1,3-Dichloropropene	NA	<18	<11	<11	<11	<6	<6	<5
Trichloroethene	700	15 J	<11	<11	<11	<6	5 J	<5
Benzene	60	<18	<11	<11	<11	<6	<6	<5
Dibromochloromethane	NA	<18	<11	<11	<11	<6	<6	<5
trans 1,3-Dichloropropene	NA	<18	<11	<11	<11	<6	<6	<5
1,1,2-Trichloroethane	NA	<18	<11	<11	<11	<6	<6	<5
Bromoform	NA	<18	<11	<11	<11	<6	<6	<5
4-Methyl-2-Pentanone	NA	<18	<11	<11	<11	Not Reported	Not Reported	Not Reported
2-Hexanone	NA	<18	<11	<11	<11	Not Reported	Not Reported	Not Reported
Tetrachloroethene	1,400	88	<11	5 J	1 J	1 J	13	1 J
1,1,2,2-Tetrachloroethane	600	<18	<11	<11	<11	<6	<6	<5
Toluene	1,500	<18	<11	<11	<11	<6	<6	1 J
Chlorobenzene	1,700	<18	<11	<11	<11	<6	<6	<5
Ethylbenzene	5,500	<18	<11	<11	<11	<6	<6	<5
m/p-Xylene	1,200	<18	<11	<11	<11	<6	<6	<5
o-Xylene	1,200	<18	<11	<11	<11	<6	<6	<5
Trichlorofluoromethane	NA	Not Reported	Not Reported	Not Reported	Not Reported	<11	<12	<11
trans-1,2-Dichloroethene	300	Not Reported	Not Reported	Not Reported	Not Reported	<6	<6	<5
2-Chloroethylvinylether	NA	Not Reported	Not Reported	Not Reported	Not Reported	<11	<12	<11
1,3-Dichlorobenzene	1,600	Not Reported	Not Reported	Not Reported	Not Reported	<11	<12	<11
1,4-Dichlorobenzene	8,500	Not Reported	Not Reported	Not Reported	Not Reported	<11	<12	<11
1,2-Dichlorobenzene	7,900	Not Reported	Not Reported	Not Reported	Not Reported	<11	<12	<11
cis-1,2-Dichloroethene	300	Not Reported	Not Reported	Not Reported	Not Reported	ND	23 JN	ND
Total VOCs		125	4	12	5	6	57	14

Notes:

* Recommended Soil Clean-up Objectives (RSCOs) defined in NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, as amended.

** RSCO for trans-1,2-Dichloroethene used.

*** RSCO for total Xylenes used.

NA = Not Available

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

CIS-1,2-Dichloroethene isomers reported as TICs. ND means no detection as a TIC.

Qualifiers defined in Appendix F

Table 5-2
Off-site Groundwater Screening Results

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	Shallow Geoprobe Groundwater Samples						Intermediate Geoprobe Groundwater Samples					
		GP-40-9' (4/17/99)	GP-41-10' (4/17/99)	GP-42-9' (4/17/99)	GP-43-9' (4/17/99)	GP-44-9' (4/17/99)	GP-45-9' (4/17/99)	GP-40-55' (4/17/99)	GP-41-55' (4/17/99)	GP-42-55' (4/17/99)	GP-43-55' (4/17/99)	GP-44-55' (4/17/99)	GP-45-55' (4/17/99)
Chloromethane	5	3 J	<10	<10	<10	<10	<10	<10	4 J	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	35	190	5 J	36	72	37	3 J	2 J	8 J	4 J	22	13
Chloroethane	5*	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	9	<5	<5	1 J	2 J	3 J	12	79	49	4 J	9	2 J
1,1-Dichloroethane	5	30	<5	<5	4 J	44	55	20	62	44	73	44	60
Chloroform	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5	<5	<5	<5	3 J	<5	<5	<5
1,1,1-Trichloroethane	5	5 J	<5	<5	<5	<5	<5	<5	82	38	2 J	6	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5	<5	<5	6	<5	2 J	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	120	<5	17	8	60	170	190	1,600 D	800 D	47	54	49
Benzene	1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5	2 J	2 J	<5	<5	<5
Bromoform	50*	<5	<5	61	<5	<5	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	60	5 J	<5	4 J	71	110	<5	120	82	150	330 D	96
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	1 J	290 E	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	840 D	<5	<5	<5	<5	<5	14	<5	<5	<5	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	5	2 J	4 J	2 J	4 J	6	4 J	2 J	3 J	2 J	<5	3 J	2 J
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	1 J	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
m/p-Xylene	5	3 J	3,200 D	<5	<5	<5	<5	<5	82	<5	<5	<5	<5
o-Xylene	5	<5	270 D	<5	<5	<5	2 J	<5	7	<5	<5	<5	<5
cis-1,2-Dichloroethene	5	250 E	400 D	310 E	340 E	650 ED	370 E	680 ED	1,000 D	660 D	170	420 ED	230 E
Total Freon TICs	NA	31 JN	ND	12 JN	161 JN	174 JN	178 JN	ND	ND	8 JN	ND	51 JN	49 JN
Total VOCs	NA	518	5,199	395	397	905	752	907	3,057	1,694	450	890	452

Notes:

"Shallow" groundwater is defined as wells screened in the interval from the top of the water table to a maximum of 15 feet into the water table.

"Intermediate" groundwater is defined as wells screened in the interval of approximately 50 to 55 ft. below grade (about 33 to 43 feet below the top of the water table)

TICs = Tentatively Identified Compounds

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

* Indicates a guidance value, not a standard.

Qualifiers defined in Appendix F

Table 5-3
City of Glen Cove Property Groundwater Sample Results
(Limited off-site Investigation - collected 1/00)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	MW-1GS (5'-10' screen) Shallow	MW-1GI (50'-60' screen) Intermediate	MW-1GD (90'-100' screen) Deep	MW-2GS (5'-10' screen) Shallow	MW-2GI (50'-60' screen) Intermediate	MW-2GD (90'-100' screen) Deep
Chloromethane	5	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	33	16	<10	57	7 J	<10
Chloroethane	5*	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	3 J	3 J	12	<5	68	20
1,1-Dichloroethane	5	17	47	10	13	38	14
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethane	5	4 J	2 J	<5	2 J	7	<5
Chloroform	7	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	3 J	<5
1,1,1-Trichloroethane	5	<5	<5	16	<5	53	21
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5
Trichloroethene	5	180	110	150	42	1,800 D	300 D
Benzene	1	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	140	370 D	18	130	120	29
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5
m/p-Xylene	5	<5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10
cis-1,2-Dichloroethane	5	520 JN	220 JN	63 JN	99 JN	800 JN	77 JN
Total Freon TICs	NA	230 JN	378 JN	ND	190 JN	11 JN	ND
Total VOCs	NA	897	768	269	343	2,896	431

Notes:

"S" wells are considered "Shallow" - wells screened in the interval from the top of the water table to a maximum of 25 feet into the water table.
"M" wells are considered "Medium Depth" - wells screened in the interval from about 90 to 100 feet below grade
"D" wells are considered "Deep" - wells screened in the interval greater than 175 feet below grade.
TICs = Tentatively Identified Compounds
NA = Not Available
Total VOCs does not include TICs
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).

Table 5-4
Regional Groundwater Sample Results - Off-site Groundwater Monitoring Wells
(Samples collected 5/99)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	Shallow Wells			Medium Depth	Deep Wells		
		GC-2S (35.8'-55.8' screen) (5/19/99)	GC-3S (28.3'-48.3' screen) (5/19/99)	GC-5S (33.1'-63.1' screen) (5/19/99)	GC-3M NA (5/19/99)	GC-2D (-113.9' - -113.8' screen) (5/19/99)	GC-3D (-127' - -147' screen) (5/19/99)	GC-5D (-95.2' - -115.2' screen) (5/19/99)
Chloromethane	5	<10	<10	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	39	<10	<10	<10	<10	<10
Chloroethane	5*	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	39	<5	<5	<5	<5	<5
1,1-Dichloroethane	5	<5	35	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	2 J	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	5	<5	44	<5	<5	<5	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	50*	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	3 J	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5
Trichloroethene	5	2 J	150 D	7	2 J	<5	<5	15 J
Benzene	1	<5	<5	<5	<5	<5	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5	<5	<5
Tetrachloroethene	5	<5	340 D	33	1 J	<5	<5	2 J
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10	<10	<10
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethane	5	<5	4 J	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10	<10	<10
m/p-Xylene	5	<5	<5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethane	5	<5	500 D	8	1 J	1 JN	<5	14
Total TICs	NA	0	89 JN	0	0	0	0	0
Total VOCs	NA	2	1,156	48	4	1	0	31

Notes:

"Shallow" - wells screened in the interval from the top of the water table to a maximum of 25 feet into the water table.

"Medium Depth" - wells screened about 90 to 100 feet below the top of the water table.

"Deep" - wells screened about 145 to 175 feet below the top of the water table.

Screened elevations are referenced to MSL.

TICs = Tentatively Identified Compounds

NA = Not Available

Total VOCs does not include TICs

<## = Compound was analyzed for but not detected The ## represents the sample quantitation limit (This is similar to the U flag).

Qualifiers defined in Appendix F

Table 5-5
Regional Groundwater Sample Results - Off-site Groundwater Monitoring Wells
(Samples collected 1/00)

All results in ug/l except as noted.

Parameter	NYSDEC Class GA GW Quality Std. (ug/l)	Shallow Wells			Deep Wells	
		GC-5S (33.1'-53.1' screen) (1/20/00)	GC-8S (28.5'-48.5' screen) (1/20/00)	GC-9S (29.7'-49.7' screen) (1/20/00)	GC-5D (-95.2' - -115.2' screen) (1/20/00)	GC-8D (-74.5' - -94.5' screen) (1/20/00)
Chloromethane	5	<10	<10	<10	<10	<10
Bromomethane	5	<10	<10	<10	<10	<10
Vinyl Chloride	2	<10	<10	<10	<10	<10
Chloroethane	5*	<10	<10	<10	<10	<10
Methylene Chloride	5	<5	<5	<5	<5	<5
1,1-Dichloroethene	5	<5	<5	6	<5	<5
1,1-Dichloroethane	5	<5	<5	6	<5	<5
Trichlorofluoromethane	5	<10	<10	<10	<10	<10
trans-1,2-Dichloroethane	5	<5	<5	<5	<5	<5
Chloroform	7	<5	<5	<5	<5	<5
1,2-Dichloroethane	0.6	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	5	<5	<5	4 J	<5	<5
Carbon Tetrachloride	5	<5	<5	<5	<5	<5
2-Chlorovinylethylether	NA	<10	<10	<10	<10	<10
Bromodichloromethane	50*	<5	<5	<5	<5	<5
1,2-Dichloropropane	1	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5
Trichloroethene	5	13	2 J	82	18	4 J
Benzene	1	<5	<5	<5	<5	<5
Dibromochloromethane	50*	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	0.4	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	1	<5	<5	<5	<5	<5
Bromoform	50*	<5	<5	<5	<5	<5
Tetrachloroethene	5	46	8	15	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5	<5	<5	<5
Toluene	5	<5	<5	<5	<5	<5
Chlorobenzene	5	<5	<5	<5	<5	<5
Ethylbenzene	5	<5	<5	<5	<5	<5
m/p-Xylene	5	<5	<5	<5	<5	<5
o-Xylene	5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	3	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	3	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	3	<10	<10	<10	<10	<10
cis-1,2-Dichlorethane	5	11 JN	ND	43 JN	9 JN	<5
Total Freon TICs	NA	ND	ND	ND	ND	ND
Total VOCs	NA	70	10	156	27	4

Notes:

"Shallow" - wells screened in the interval from the top of the water table to a maximum of 25 feet into the water table.
"Medium Depth" - wells screened about 90 to 100 feet below the top of the water table.
"Deep" - wells screened about 145 to 175 feet below the top of the water table.
Screened elevations are referenced to MSL.
TICs = Tentatively Identified Compounds
NA = Not Available
Total VOCs does not include TICs
<## = Compound was analyzed for but not detected. The ## represents the sample quantitation limit (This is similar to the U flag).
Qualifiers defined in Appendix F