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Remedial Action

REMEDIAL INVESTIGATION / FEASIBILITY STUDY (RI/FS)
WORK PLAN

PRECISION CONCEPTS
26 PRECISION DRIVE
SHIRLEY, NEW YORK 11967

NYSDEC SHWS I.D. No. 1-52158

5/98

Prepared For:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-7010

MAY 1998

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GENERAL CONSOLIDATED INDUSTRIES, INC.

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May 6, 1998

New York State
Department of Environmental Conservation
Environmental Remediation Division
50 Wolf Road
Albany, New York 12233-7010

Attn: Mr. Michael McCabe

Re: **Remedial Investigation/Feasibility Study Work Plan**
26 Precision Drive
Shirley, New York 11967
SHWS I.D. No. 1-52158

Dear Mr. McCabe:

Enclosed please find three (3) original copies of the report entitled "Remedial Investigation / Feasibility Study (RI/FS) Work Plan" for the above referenced site.

Should you have any questions, or require additional information, please do not hesitate to contact our office.

Very truly yours,

Matthew Boeckel
Senior Hydrogeologist

MB:sh
Encs.

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1.0 INTRODUCTION

1.1 Overview

This Remedial Investigation Work Plan has been prepared by Kempey Engineering and General Consolidated Industries, Inc. (GCI), for the property located at 26 Precision Drive, Shirley, New York, identified on the tax map as Section 584, Block 1, Lot 4.034. Please refer to Figure 1 - Site Location Map.

The subject site is located at 26 Precision Drive, which is approximately 1,343 feet east of William Floyd Parkway, Town of Brookhaven, Suffolk County, Long Island, New York. The subject property is located in a moderately developed commercial neighborhood. The site is bordered on the north by the Long Island Expressway, to the south and west of the site are commercial buildings and to the east is vacant undeveloped land. Brookhaven National Laboratory (BNL), which has been documented as a source of groundwater contamination, is located less than one-eighth (1/8) of a mile to the north (upgradient) of the subject property.

The subject property was vacant undeveloped land prior the construction of the current subject building in 1985. The property has been occupied for industrial and warehouse use since originally constructed. The site was originally occupied by Precision Concepts. The operations conducted at Precision Concepts was the manufacturer of metal fixtures for use by the electronics industry. Precision Concepts operated its business from 1985 to 1993. The site is currently occupied by Luitpold Pharmaceutical, which is a distributor of pharmaceutical products. The site is utilized for general office and warehouse purposes as well as some small scale bench testing which entails the use of hazardous materials.

In May 1988, the Suffolk County Department of Health Services (SCDHS) sampled a leaching pool located on the east side of the subject building. The analytical results indicated that 1,1,1-trichloroethane (TCA) was present in the sample at a concentration of 1,200 parts per billion (ppb). No remedial action was undertaken by the SCDHS at this time. In addition, the SCDHS re-sampled the leaching pool in May 1990 and found no organic contamination.

Brookhaven National Laboratory (BNL) is a known source of groundwater contamination and is located less than one-eighth (1/8) of a mile upgradient (north) of the subject property. BNL is currently listed on the United States Environmental Protection Agency (US EPA) National Priority List (NPL) and the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) and CORRACTS. The BNL site is a 5,265 acre, federally owned research facility operated by the Department of Energy, consisting of an active lab and

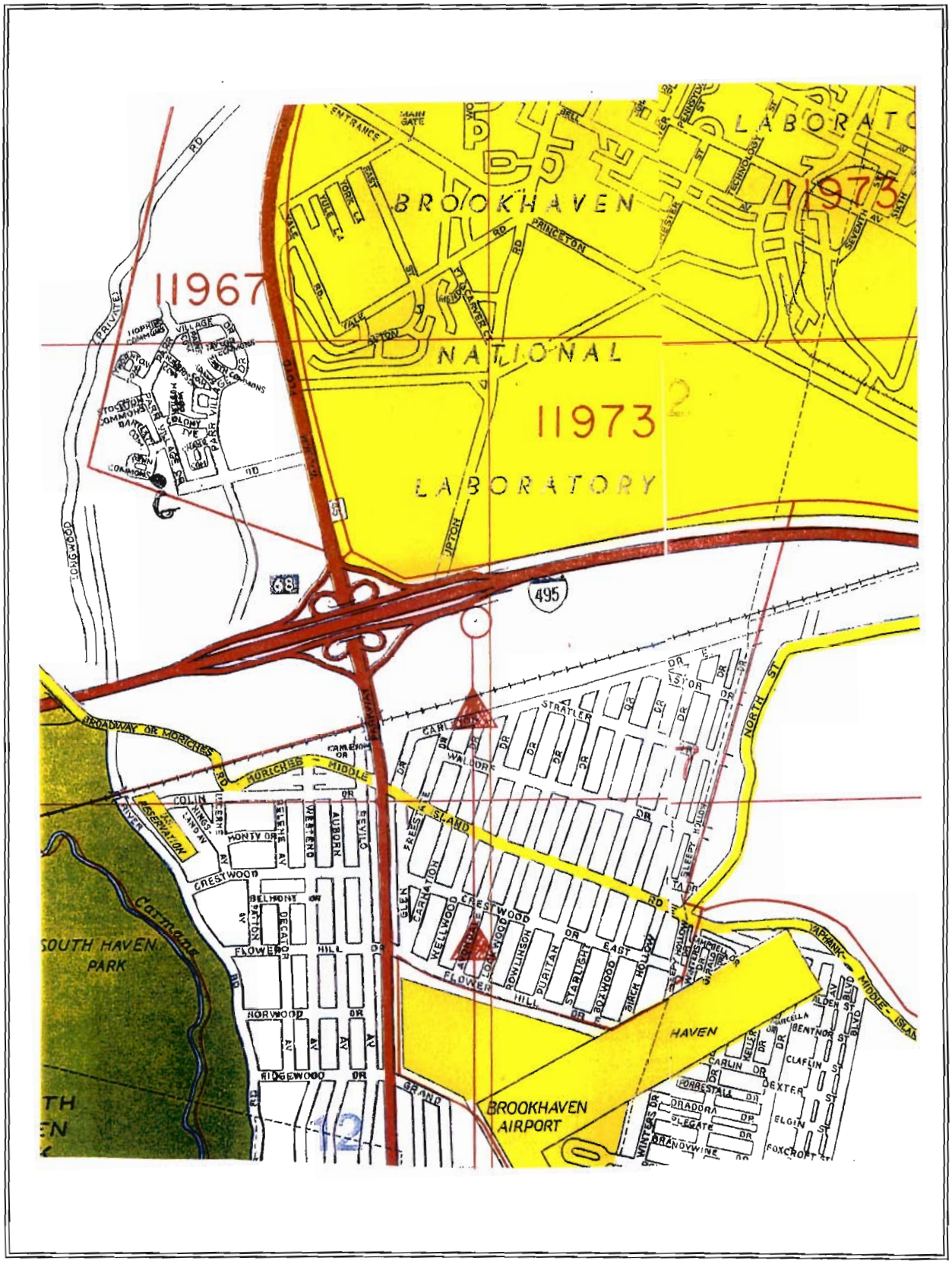


FIGURE 1

SITE LOCATION MAP
Precision Concepts
26 Precision Drive
Shirley, New York

waste disposal facility, with inactive and active landfills, "chemical holes", a sewage treatment plant and a former ash fill. At the hazardous waste management facility (HWMF), spills of VOCs and other compounds have contaminated the groundwater. In 1990, BNL discovered that traces of 1,1,1-trichloroethane (TCA) and dichloroethane (DCA) were detected in a groundwater monitoring well located along the southern boundary of the site. The most recent data regarding BNL indicates that there are seven (7) volatile organic compound (VOC) contamination plumes emanating from the site.

Based upon the presence of the contamination detected in the southern BNL groundwater monitoring well, the SCDHS performed a sampling survey of approximately ninety (90) homes located south of the expressway and south of the subject site where private drinking water wells were sampled for trace organics. Of the ninety (90) private wells tested, five (5) wells were found to be contaminated with TCA and DCA. From May to October of 1990, The SCDHS Bureau of Groundwater Resources installed twenty (20) groundwater monitoring wells in order to determine groundwater flow and origin of the contamination. The testing of wells located along the northern side of the Long Island Expressway (L.I.E) south service road (adjacent/north of the subject site) indicated low levels of contamination (<15 ppb) at 30 to 110 feet below the water table. Testing of wells located along Precision Drive indicated levels of TCA contamination (3-9300 ppb) at 10 to 40 feet below the water table. The SCDHS estimated through additional monitoring wells that there is a plume of contamination approximately 300 feet wide by 3100 feet long. The SCDHS nominated the subject property to be listed as a NYS DEC Inactive Hazardous Waste Disposal Site (IHWD).

The purpose of the Remedial Investigation / Feasibility Study (RI/FS) work plan is to determine potential on-site sources of contamination as well as the extent of any soil contamination present at the site which may have lead to contamination of the groundwater at the subject site and in the surrounding vicinity.

1.2 Work Plan Approach

The objectives of this Remedial Investigation / Feasibility Study (RI/FS) Work Plan are to further characterize the nature and extent of possible soil contamination at the site and to obtain data necessary to evaluate remedial alternatives, if necessary, for the site. A site investigation will be conducted and will include the collection of field data as well as laboratory analytical data to evaluate the extent and nature of contaminants in the soil, to identify potential contaminant sources and migration pathways, and to support a remedial alternative or Interim Remedial Measure (IRM), if required.

Based upon the results of the Remedial Investigation, there may be a need for characterization of the groundwater. A groundwater sampling plan will include representative samples of groundwater being collected at discrete intervals in the vicinity of contamination sources. In addition a series of groundwater monitoring wells will be installed across the property in perpendicular transects (east to west) with respect to the groundwater flow direction. This method of sampling will allow for characterization of the groundwater throughout the site as well as with respect to potential on-site sources of contamination.

This work plan presents Kempey Engineering and GCI's proposed technical scope of work for the Remedial Investigation to be conducted at the subject property.

2.0 ENVIRONMENTAL SETTING

2.1 Hydrogeologic Setting

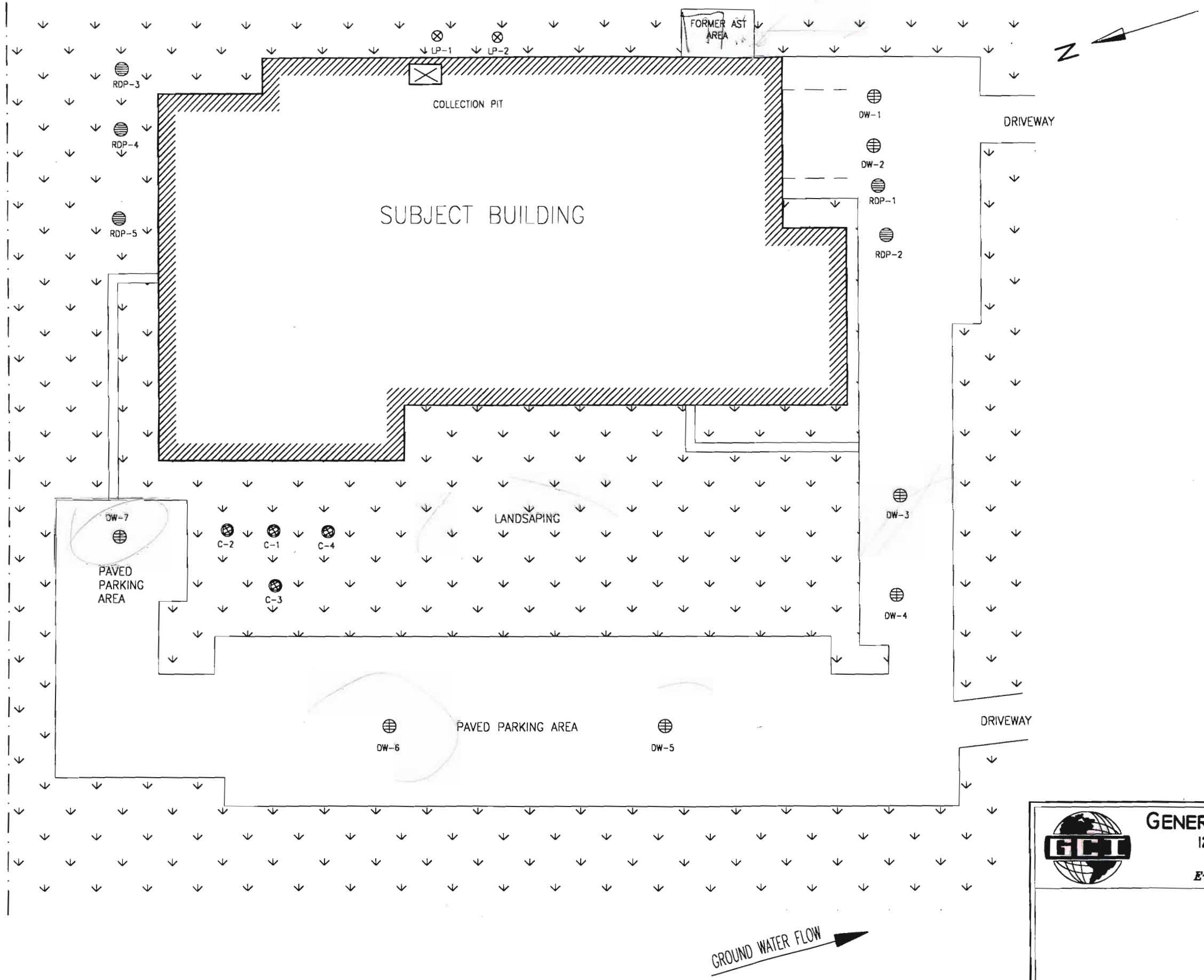
The subject site is located in the Atlantic Coastal Plain physiographic province which is characterized by low hills of unconsolidated sands, gravel and silt. According to Franke (1972), regionally, the subsurface deposits consist of the Upper Glacial deposits that are characterized by southward sloping deposits of sand, gravel and silt. The Upper Glacial deposits have a maximum thickness of 600 feet. They are underlain by the Magothy, Raritan and Lloyd Formations. The Gardiners clay and the Jameco gravel separate the Upper Glacial deposits and the Magothy Formation along the south west portion of Long Island.

The subject site is in the Upper Glacial aquifer. The Upper Glacial consists of Pleistocene moraine and outwash deposits. The water table is located primarily in the glacial aquifer which underlies a majority of Long Island. In general, the upper glacial is thickest near the north shore and eastern Suffolk County. Hydraulic conductivity is greatest along the southern part of the island, where the outwash deposits consist mainly of well draining coarse sand and gravel.

According to a soil survey of Suffolk County conducted by the United States Department of Agriculture, the lithology at the subject site has been classified as Riverhead Sandy-Loam. The Riverhead series typically consists of well-drained, moderately coarse textured soils. The Riverhead series is very permeable and allows for rapid groundwater flow.

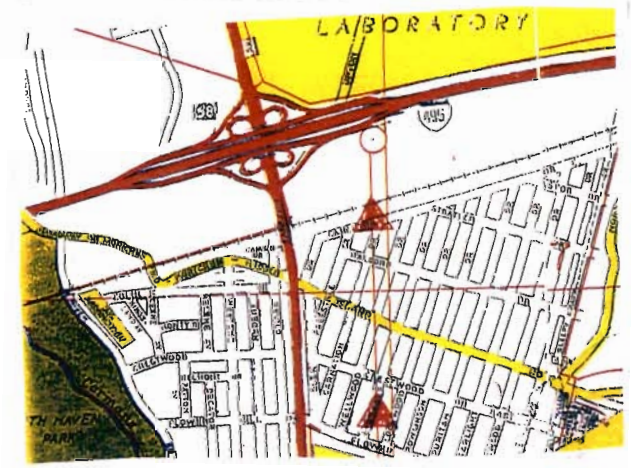
Fresh groundwater originates in the form of precipitation, which on Long Island, averages approximately 44 inches per year. This precipitation will infiltrate into the subsurface and act as the sole recharge mechanism for replenishing water in the upper glacial aquifer system. Under the present conditions of infiltration, groundwater is recharging at a rate of approximately 350 billion gallons of water per year. The Upper Glacial has been designated a sole source aquifer by the US EPA, and as such is protected by US EPA mandated remediation legislation.

According to groundwater contour maps provided by the SCDHS, groundwater is approximately forty (40) to forty-five (45) feet below ground surface at the subject site. Groundwater flows south under a regional hydraulic gradient of 0.75 ft/foot. The groundwater in the vicinity of the subject site are identified as GA. GA waters are classified as "fresh groundwater". The best usage of Class GA waters is as a source of potable water supply, as defined in Section 701.15 of the New York State Department of Environmental Conservation's (NYS DEC) "Water Quality Regulations - Surface Water and Groundwater Classifications and Standards".



LEGEND

- PROPERTY LINE
- BUILDING BORDER
- CONCRETE WALL
- LEACHING POOL SAMPLE
- LOADING BAY DRAIN SAMPLE
- ROOF DRAIN SAMPLE
- CESSPOOL



SITE LOCATION

GENERAL CONSOLIDATED INDUSTRIES INC.
125 BAYLIS ROAD, MELVILLE, NEW YORK 11747
1-800-842-5073
Environmental & Engineering Consultants

TITLE:	FIGURE 2 - SITE PLAN		
LOCATION:	26 Precision Drive SHIRLEY, NEW YORK SECTION: 584.00 BLOCK: 01.00 LOT: 04.034		
CLIENT:	KEMPEY ENGINERING		
DRAWN BY: PJH	DATE: 5 / 21 / 98	PROJECT No.: 960102	
CHECKED BY: TS	DATE: 5 / 21 / 98	DRAWING No.: 960102SP	
LAST REVISED BY:	DATE:	SCALE: 1" = 55'	FIG. No.: 1 OF 1

2.2 Surface Water and Drainage

The site is nearly level throughout. The storm water runoff at the site either directly infiltrates into the subsurface soil or is directed to a series of on-site storm water collection drywells. There is no municipal sewer service available in the vicinity of the subject property.

There are no ponds, lakes, streams or other water bodies on the subject property or in the vicinity. The subject site is located in the middle of Long Island, and as such there are no major bodies of water in a close proximity. There are no NYSDEC wetlands or other protected lands located at the subject site or in the immediate vicinity.

3.0 SITE BACKGROUND AND SETTING

3.1 Current Conditions

The subject site is an irregular shaped parcel, with approximately 1,355 feet of frontage along the north side of Precision Drive. The property is approximately 900 feet deep. The total subject parcel is approximately 636,000 square feet or 15.9 acres. The building itself occupies approximately 6% of the subject site. The majority of the site is undeveloped and is covered with natural vegetation, the remainder of the property is developed as paved parking areas and drive ways for the facility.

The Town of Brookhaven Building Department records indicated that the subject building was erected circa 1985. The subject building is constructed of concrete block with brick veneer. The building rests on a poured concrete slab foundation. Windows are comprised primarily of bronze plate glass in aluminum frames. The building space consists of office areas along the north end, reception/waiting area, conference room, lunch room, storage rooms, a research and development lab, office areas, bathrooms (office and warehouse), loading area and three warehouse/storage areas along the south end. The office section and primary entrance to the building is accessible from the north and west sides. Four (4) overhead bay doors access the warehouse/storage areas from the south side. All office areas are finished with carpeted floors, sheetrock walls and suspended acoustic ceilings. All manufacturing/storage areas remain unfinished with poured concrete floors, concrete walls and steel corrugated ceilings/roof deck. The heat for the site is provided to the warehouse areas of the building via gas and electric fired, ceiling mounted forced hot air systems. All other areas including offices and research and development areas are heated via a gas fired, WEIL McLAIN boiler/circulating hot water baseboard system. The primary roof of the building was observed to be a flat/terraced type.

The site utilizes an on-site sanitary system, which is located on the west side of the subject building. The septic system, consists of a primary septic tank and three overflow pools. There are seven (7) storm water collection drywells located throughout the paved parking areas of the subject site. There are two (2) leaching pools located on the east side of the subject building. It was reported that the eastern leaching pools formerly received discharge of non-contact cooling water from the interior operations conducted by Precision Concepts. There are three (3) buried roof drainage drywells located on the north side of the subject building, as well as two (2) roof drainage drywells on the south side of the subject building. Please refer to Figure 2 - Site Plan for the locations of the site features. In addition, photographs of the subject property have been included as Appendix A with this report.

There are currently no storage tanks utilized at the subject site. There were records that the previous operations conducted by Precision Concepts entailed the use of storage tanks. The SCDHS records indicated that two (2) storage tanks and one (1) drum storage area were removed from the site. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 7/93

Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 7/93

Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 7/93

3.2 Current Site Operations

The site is currently occupied by Luitpold Pharmaceutical, which is a distributor of pharmaceutical products. The site is utilized for warehouse and office purposes. There is only minor use of chemicals at the site which is well documented and inventoried. The current operations conducted at the facility do not pose an apparent environmental threat to the public health or the subject property.

3.3 Site History

According to the Town of Brookhaven Building Department records the site is zoned for commercial / industrial uses. The Town of Brookhaven Building Department records indicated that the site was originally developed circa 1985. The site was first occupied by Precision Concepts which operated at the site from 1985 until 1993. Precision Concepts was a manufacturer of metal machine parts for use in the electronics industry. Based upon the presence of TCA contamination in a groundwater monitoring well located on the southern boundary of the BNL site, the SCDHS performed a groundwater investigation in the vicinity of the subject property and BNL in 1990. Based upon the results of the groundwater investigation, the SCDHS estimated that there is a plume of contamination approximately 300 feet wide by 3100 feet long. The SCDHS nominated the subject property to be listed as a NYS DEC IHWD site.

4.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Information regarding the environmental history of the site was obtained from the Suffolk County Department of Health Services (SCDHS) Groundwater Investigation Report dated October 1990 as well as a combination Phase I Environmental Site Assessment and Phase II Subsurface Investigation report dated February 18, 1997, prepared by General Consolidated Industries, Inc. A summary of both environmental reports is provided below. In addition, a copy of each report is included as Appendix B with this report.

4.1 Previous Environmental Assessments

SCDHS - Groundwater Investigation Report

In March 1990, BNL informed the SCDHS that traces of 1,1,1-trichloroethane (TCA) and dichloroethane (DCA) were detected in a groundwater monitoring well located along there southern boundary of the subject site. In response to this the SCDHS initiated sampling of ninety (90) private residential wells located downgradient of the BNL site. The samples were analyzed by the SCDHS for volatile organic compounds (VOCs). The analytical results indicated that five (5) of the wells were contaminated with (TCA) and 1,1-dichloroethene (DCE) at concentrations which exceeded the NYS DEC groundwater standards.

From May to October 1990, the SCDHS installed a total of twenty (20) groundwater monitoring wells as part of the groundwater investigation. The wells were completed to an average depth of 120 feet below grade. The wells were located in east-west transacts which run approximately perpendicular to the groundwater flow direction in the vicinity of the subject site. The direction of the groundwater in the vicinity of the study area was determined to be in a due south direction. Representative groundwater samples were obtained from each of the wells, the groundwater samples were collected at ten (10) foot intervals below the regional groundwater table. No groundwater monitoring wells were installed on the Precision Concepts site. Concentrations of TCA ranging from 130 to 9,400 parts per billion (ppb) were detected in wells 11 and 13, which are located along Precision Drive. It was estimated that there is a contamination plume measuring approximately 300 feet wide by 3,100 feet long downgradient of the subject property. The report also indicated that BNL is a contributory source of TCA contamination although this contamination is believed to be in a much deeper portion of the aquifer. Please refer to Figure 3 - SCDHS Groundwater Investigation Results for the location of the monitoring wells as well as the analytical results obtained during the SCDHS investigation.

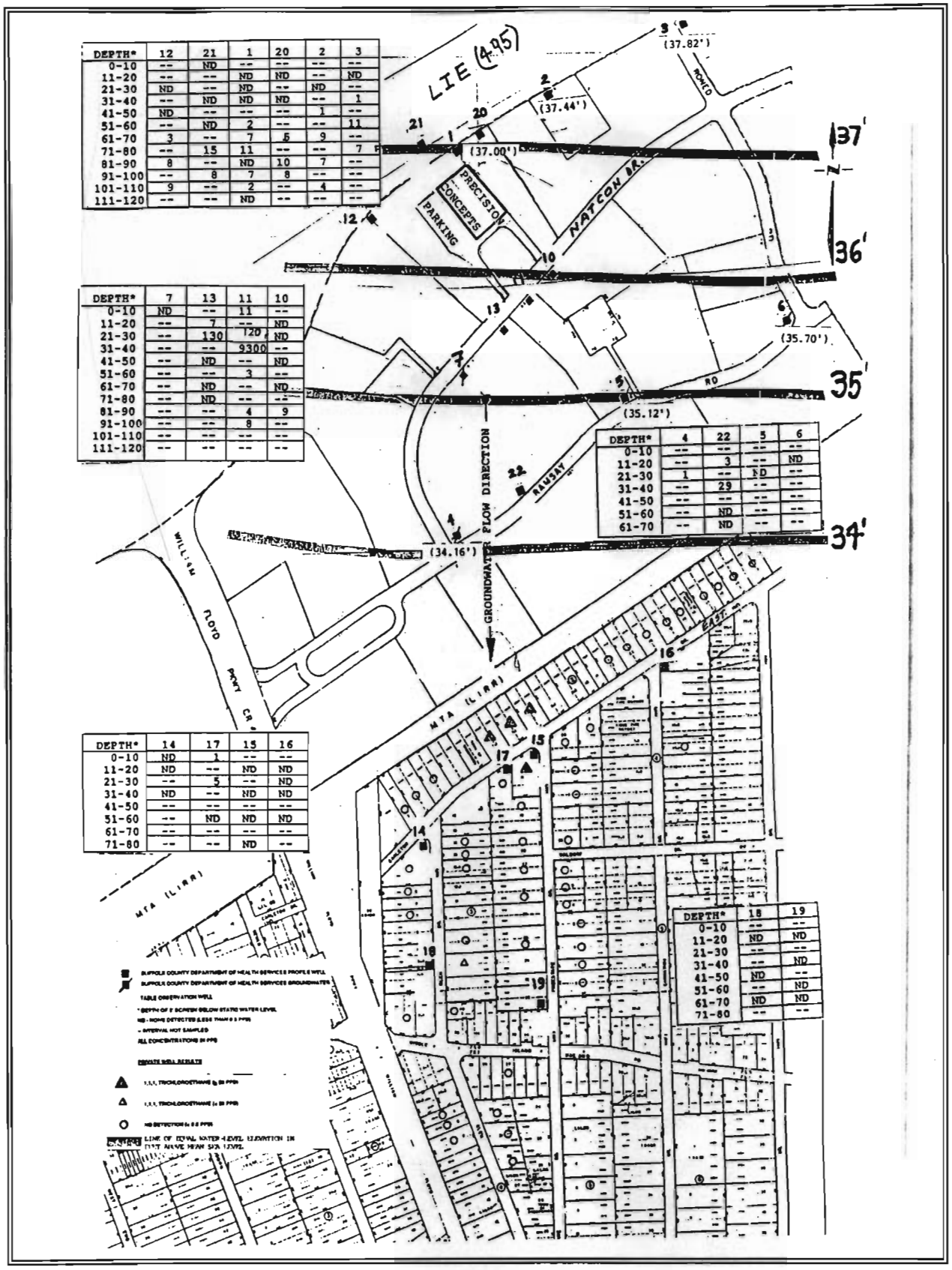


FIGURE 3

SCDHS GROUNDWATER INVESTIGATION RESULTS

Precision Concepts
26 Precision Drive
Shirley, New York

GCI, Inc. - Phase I Environmental Site Easement & Phase II Subsurface Investigation

Please note that GCI, originally became involved with the subject site during the preparation of a Phase I Environmental Site Assessment (ESA) report dated August 14, 1995. Subsequent to the completion of the original Phase I ESA, there were several Phase II Investigation and remedial activities conducted at the site. In January 1997, GCI, Inc., was retained to update the original phase I ESA, as well as to provide a summary of all subsurface and remedial work that had been conducted at the site. Therefore, a combination Phase I ESA and Phase II Subsurface Investigation report dated February 18, 1997 was completed by GCI, Inc. The following is a summary of the findings of the report.

The results of the updated Phase I ESA indicated that there were no potential on-site concerns that were posing an apparent environmental threat to the general public or the subject property. The Phase I ESA indicated that based upon a review of the US EPA and NYS DEC database listings, that Brookhaven National Laboratory (BNL) is located less than one-eighth (1/8) of a mile upgradient (north) of the subject property. The records also indicated that BNL is listed on several US EPA databases, including the National Priority List (NPL), the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), the Resource Conservation and Recovery Information System Treatment Storage and Disposal (RCRIS-TSD) facilities, and CORRACTS. Based upon this information there was a concern that there may be contamination migrating onto the subject property via a groundwater plume emanating from the BNL site.

The Phase II activities conducted at the site entailed a soil boring program, a drywell and roof drain sampling program, as well as the remediation of a collection pit located on the east side of the building. The above noted Phase II activities and remedial measures were conducted at the site on several different occasions.

A Subsurface Investigation was initiated at the subject site on May 16, 1996, and January 24 & 31, 1997. The investigation consisted of installing a total of six (6) soil borings throughout the subject property. The soil borings were located in upgradient and downgradient positions with respect to possible sources of contamination. Soil and groundwater samples were obtained from each of the borings. Soil samples were collected from directly above the water-table in each of the soil borings. Groundwater samples were collected at the soil / water interface level which was encountered at a depth of approximately forty-four (44) feet below land surface. The collected soil samples were not submitted for laboratory analysis, however an inspection of the

collected samples indicated that there was no evidence of contamination observed in any of the samples, such as staining, odor, etc. A total of five (5) groundwater samples were submitted for laboratory analysis of volatile organic compounds (VOCs) utilizing EPA method 624 as well as for the 8 RCRA metals. The analytical results indicated that there were no VOCs detected in any of the samples above their respective laboratory analytical method detection limit. The metals analysis revealed that there were elevated levels of metals present in both upgradient and downgradient samples. It is believed that the elevated levels of metals are not due to operations conducted at the subject site but rather from a contamination plume emanating from BNL.

There are two (2) storm water drywells located in the rear loading dock area (DW-1 and DW-2), in addition there are to roof drains located to the west of the loading dock area (DW-3 and DW-4). Representative samples were obtained from DW-1 and DW-2 on May 17, 1996, July 31, 1996 and January 28, 1997. The analytical results for all there (3) sampling episodes indicated that there were no VOCs detected above their respective laboratory analytical method detection limit. The metals analysis for DW-1 indicated that copper was detected at elevated concentrations on May 17, 1996 and January 28, 1997, in addition chrome was detected at an elevated level in DW-2 on January 28, 1997. There was no remedial work conducted on the drywells. There were no VOCs detected above their respective method detection limit in the samples from DW-3 and DW-4, in addition there were no elevated levels of metals present. The soil samples from the drywells and roof drains were obtained from the invert level at the bottom of each pool. There were no soil borings or probes conducted in either the drywells or roof drains. Although, please note that soil borings SB-5 and SB-6 were located directly downgradient of the two (2) roof drains (DW-3 and DW-4) on the south side of the subject building.

There was a concrete collection pit located on the east side of the subject building. This collection pit was formerly utilized by Precision Concepts to temporarily store waste water generated during the tumbling room operations. The Suffolk County Department of Health Services (SCDHS) inspected the pit during a routine site investigation. The SCDHS observed that the corner of the collection pit was breached, therefore a representative soil sample was collected from below the breached area in the collection pit. The analytical results indicated that there were elevated levels of metals present in the soil below the collection pit. Based upon these results the SCDHS requested that the soil below the collection pit be remediated and that the collection pit be sealed at grade with concrete. On July 17, 1996, approximately two (2) yards of soil were removed from below the collection pit. A representative end-point soil sample was collected from the pit. The analytical results indicated that there were no levels of metals present

which exceeded the respective SCDHS regulatory levels. The SCDHS indicated that no further work was required and that the collection pit can be sealed. The collection pit was therefore filled with clean sand and capped at grade with a six-inch thick layer of concrete.

4.2 Additional Data Needs

Based on a review of the previous sampling results and historical records for the site, additional data needs have been identified to fully characterize the nature and extent of contamination at the site and to evaluate potential remedial action for the site.

A thorough soil investigation needs to be conducted at the subject site in order to address all potential on-site sources of contamination.

5.0 WORK PLAN RATIONALE

5.1 Data Quality Objectives

The Data Quality Objectives (DQOs) for the Remedial Investigation / Feasibility Study (RI/FS) work plan will be applicable to all data-gathering activities at the site. DQOs will be incorporated into sampling, analysis, and quality assurance tasks associated with the RI/FS work plan.

The primary data users for this project will be Kempey Engineering and GCI, Inc. The secondary data user will be the Data Validator. No other data users are anticipated at this time.

Data to be collected during the Remedial Investigation/ Feasibility Study (RI/FS) are intended to characterize the nature and extent of soil contamination at the site. The data will allow for the evaluation and possible implementation of potential remedial alternatives or interim remedial measures (IRM).

For this project, it is anticipated that field screening will be performed during any soil and leaching pool sediment sampling. Field screening includes monitoring for volatile organic compounds (VOCs) using a HNU Photoionization detector (PID), and visual observations of soil characteristics. Representative samples will be analyzed by a NYS DOH ELAP CLP certified laboratory for TAL Metals and TCL Volatiles. The laboratory selected for the analysis of the samples will be Industrial Corrosion Management Inc., located in New Jersey.

The data uses will be for site characterization, possible risk assessment, evaluation of remedial alternatives or interim remedial measures (IRM), and engineering design.

5.2 Work Plan Approach

The Work Plan Approach is to present and evaluate previous site data, as appropriate for the respective DQOs. The existing information will be incorporated into the tasks necessary for the completion of additional data gathering necessary to evaluate potential remedial alternatives for the site soil. Data previously collected will be supplemented by additional sampling and analysis. Based on the findings of the investigation, remedial alternatives and IRMs may be evaluated and the most feasible alternative(s) will be identified. IRMs are intended to remediate materials which may be a source of contamination. If contamination is detected in the leaching pool sediment or other soil samples during the Remedial Investigation, an IRM work plan may be formulated and submitted to the DEC regarding the removal of sediment from the leaching pools. The IRM for the site may include the removal of contaminated leaching pool sediments and/or other potential sources of contamination.

Based upon the results of the Remedial Investigation, there may be a need for characterization of the groundwater. A groundwater sampling plan may include representative samples of groundwater being collected at discrete intervals in the vicinity of contamination sources. In addition a series of groundwater monitoring wells may be installed across the property in perpendicular transects (east to west) with respect to the groundwater flow direction. This method of sampling will allow for characterization of the groundwater throughout the site as well as with respect to potential on-site sources of contamination.

5.3 Applicable or Relevant and Appropriate Requirements

The following applicable or relevant and appropriate requirements for the site have been preliminarily identified:

- The NYS DEC Recommended Soil Cleanup Objectives (TAGM #HWR-94-4046) will be used to compare soil and sediment samples.

- The NYS DEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards - Title 6, Chapter X Parts 700-706.

6.0 FIELD SAMPLING PLAN

To address the additional data needs as discussed in Section 4.2, Kempey Engineering and GCI, Inc., propose to perform the following tasks. All soil samples will be obtained utilizing a GeoProbe drill rig. All collected soil samples will be screened with an HNU Photoionization Detector (PID) as well as visually inspected in an attempt to identify signs of potential contamination. The proposed sampling locations associated with the tasks are shown on Figure 4 - Sampling Location Map.

6.1 West Side Sanitary System

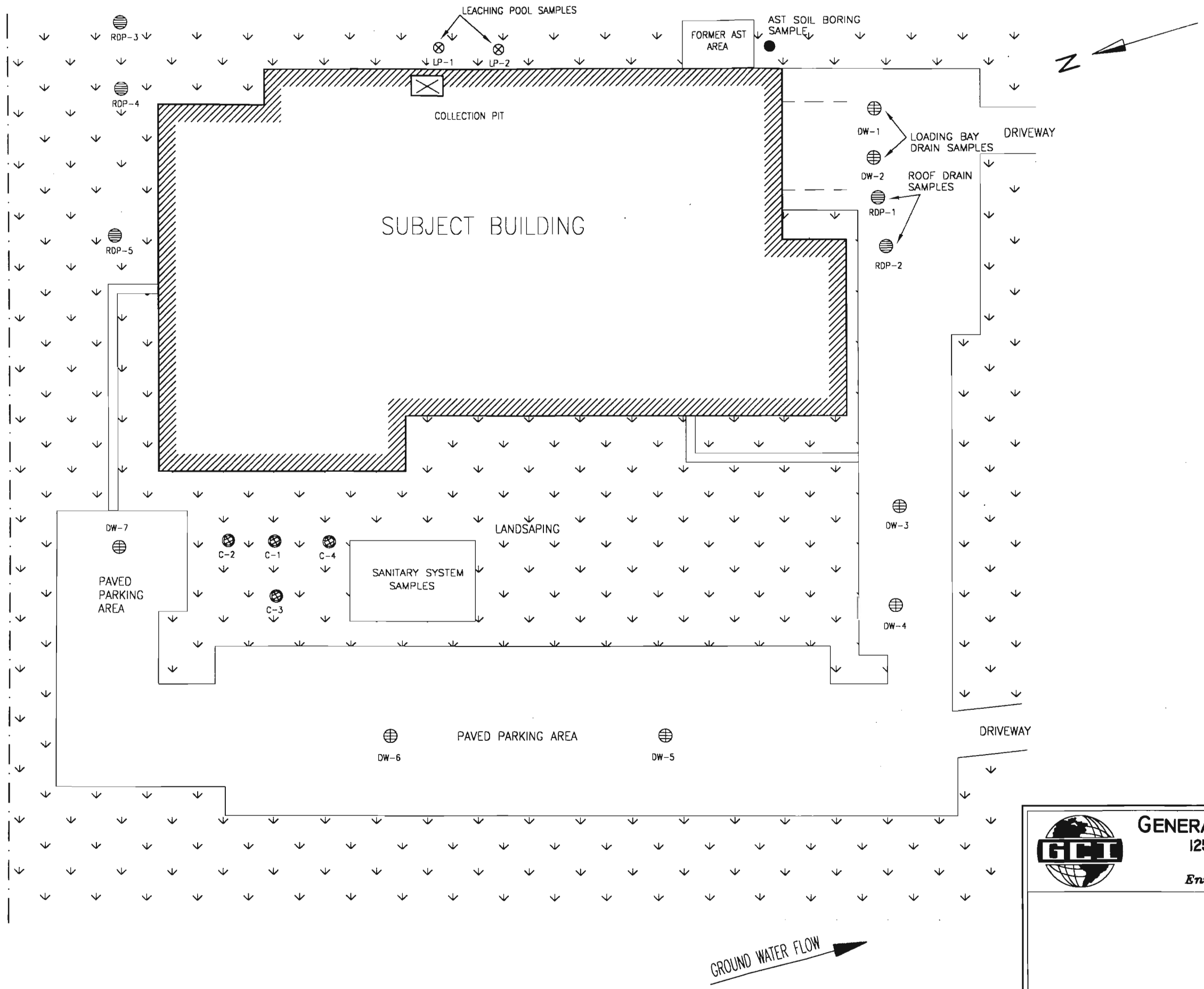
The sanitary system for the subject building consists of a primary cesspool (C-1) and three (3) overflow leaching pools (C-2 through C-4) located to the north, west and south of C-1. Please note that in June 1992, the SCDHS approved the pump-out and disposal of approximately 8,000 gallons of liquid from the on-site cesspool. There have been no other remedial activities conducted with regard to the on-site sanitary system.

C-1 (eastern sanitary leaching pool): This is a primary septic tank and is constructed with solid walls and bottom. Based upon the fact that the septic tank is constructed with a solid bottom no representative soil samples will be collected from this area. However, should further investigation prove that the bottom of the primary septic tank is not solid, then representative samples will be collected in a similar fashion as the remaining pools.

C-2 (northern sanitary leaching pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

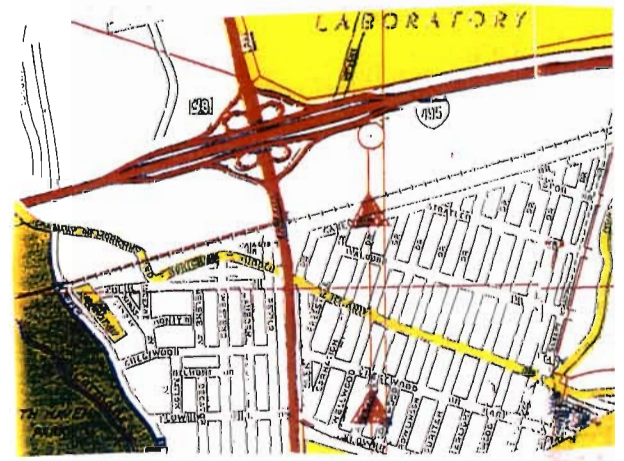
C-3 (western sanitary leaching pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

C-4 (southern sanitary leaching pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.



LEGEND

- PROPERTY LINE
- BUILDING BORDER
- CONCRETE WALL
- LEACHING POOL SAMPLE
- LOADING BAY DRAIN SAMPLE
- ROOF DRAIN SAMPLE
- CESSPOOL



SITE LOCATION

GENERAL CONSOLIDATED INDUSTRIES INC.
125 BAYLIS ROAD, MELVILLE, NEW YORK 11747
1-800-842-5073
Environmental & Engineering Consultants

TITLE:	FIGURE 4 – SAMPLING LOCATION MAP		
LOCATION:	26 Precision Drive SHIRLEY, NEW YORK SECTION: 584.00 BLOCK: 01.00 LOT: 04.034		
CLIENT:	KEMPEY ENGINERING		
DRAWN BY: PJH	DATE: 5 / 13 / 98	PROJECT No.: 960102	
CHECKED BY: TS	DATE: 5 / 13 / 98	DRAWING No.: 960102SP	
LAST REVISED BY:	DATE:	SCALE: 1" = 55'	FIG. No.: 1 OF 1

All soil borings will be completed to the groundwater interface level. The collected soil samples will be field screened with an HNU photoionization detector (PID), as well as visually inspected. On the basis of the field observations and PID screening results, a total of one (1) soil sample will be submitted from each of the pools for laboratory analysis of TCL Volatiles and TAL Metals with Category B CLP deliverables. Please note that should the PID readings and visual inspection prove to be inconclusive as to the presence of contamination, then the soil sample collected from directly above the groundwater interface will be submitted for analysis.

6.2 East Side Leaching Pool System

There are two (2) leaching pools located on the east side of the subject building. The pools had formerly received discharges of non-contact cooling water during the normal operations conducted at the site by Precision Concepts. The pools are currently accessible at grade with steel manhole covers.

LP-1 (northern leaching pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

LP-2 (southern leaching pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

All soil borings will be completed to the groundwater interface level. The collected soil samples will be field screened with an HNU photoionization detector (PID), as well as visually inspected. On the basis of the field observations and PID screening results, a total of one (1) soil sample will be submitted from each of the pools for laboratory analysis of TCL Volatiles and TAL Metals with Category B CLP deliverables. Please note that should the PID readings and visual inspection prove to be inconclusive as to the presence of contamination, then the soil sample collected from directly above the groundwater interface will be submitted for analysis.

6.3 Roof Drains

The roof drainage system a the subject building consists of two (2) leaching pools on the north side of the subject building in order to collect the storm water from the north side of the roof and there are two (2) leaching pool located on the south side for storm water collection purposes. The SCDHS noticed during a routine inspection of the subject site that there was a "Y" connection in the rear (south) central roof drainage line which appeared to have been open at one time. The two (2) roof drain leaching pools were located below grade. The pools were uncovered and representative soil samples from the bottom invert level were obtained for laboratory analysis of volatile organic compounds (VOCs) using EPA method 8260 as well as for the thirteen (13) heavy metals. The analytical results indicated that there were no elevated levels of either VOCs or metals present in either sample.

RDP-1 (eastern pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

RDP-2 (western pool): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

All soil borings will be completed to the groundwater interface level. The collected soil samples will be field screened with an HNU photoionization detector (PID), as well as visually inspected. On the basis of the field observations and PID screening results, a total of one (1) soil sample will be submitted from each of the roof drains for laboratory analysis of TCL Volatiles and TAL Metals with Category B CLP deliverables. Please note that should the PID readings and visual inspection prove to be inconclusive as to the presence of contamination, then the soil sample collected from directly above the groundwater interface will be submitted for analysis.

6.4 Storm Water Drains

There are two (2) storm water drains located in the rear (south) loading dock. The drains are utilized for storm water collection only, they are not connected to any interior piping. Previous samples obtained from the loading dock storm drains have indicated the presence of copper and chromium at elevated levels. There has been no remedial work conducted on the loading dock storm drains.

DW-1 (eastern drain): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

DW-2 (western drain): Soil sample from the bottom invert level and then representative soil samples will be collected at continuous five (5) foot intervals as described below.

All soil borings will be completed to the groundwater interface level. The collected soil samples will be field screened with an HNU photoionization detector (PID), as well as visually inspected. On the basis of the field observations and PID screening results, a total of one (1) soil sample will be submitted from each of the storm water drains for laboratory analysis of TCL Volatiles and TAL Metals with Category B CLP deliverables. Please note that should the PID readings and visual inspection prove to be inconclusive as to the presence of contamination, then the soil sample collected from directly above the groundwater interface will be submitted for analysis.

6.5 Former Aboveground Storage Tank (AST) Area

There was a former 6,000 gallon AST located near the southeast corner of the subject building. The AST was utilized for storage of waste water contaminated with TCA. This area is secured with a 4-foot high concrete berm area. The AST was decommissioned and removed from the site in 1993. One (1) soil boring will be conducted directly downgradient and as close to this area as possible.

SB-1 (directly south of the AST area): The soil boring will be completed to a final depth of approximately 45 feet bls. Soil samples will be collected at ten (10) foot intervals starting at five (5) feet below grade as described below.

The soil boring will be completed to the groundwater interface level. The collected soil samples will be field screened with an HNU photoionization detector (PID), as well as visually inspected. On the basis of the field observations and PID screening results, a total of one (1) soil sample will be submitted from the soil boring for laboratory analysis of TCL Volatiles and TAL Metals with Category B CLP deliverables. Please note that should the PID readings and visual inspection prove to be inconclusive as to the presence of contamination, then the soil sample collected from directly above the groundwater interface will be submitted for analysis.

6.6 Quality Assurance Project Plan

6.6.1. Sampling Equipment Decontamination Procedures

All non-disposable downhole equipment (i.e., augers, hand augers, sampling sheaths, etc.) used during the drilling and sampling will be decontaminated prior to use at each location to prevent cross contamination. All non-disposable equipment will be steam cleaned or decontaminated. The decontamination procedures are as follows:

1. Equipment will be scrubbed in a bath of potable water and low-phosphate detergent;
2. Potable water rinse;
3. Rinse with ten percent (10%) nitric acid (one percent (1%) for carbon steel) if metals are to be analyzed;
4. Potable water rinse;
5. A pesticide-grade methanol rinse followed by a pesticide-grade hexane rinse;
6. Deionized water rinse;
7. Air dry.

6.6.2 Chain of Custody Procedures

For each day of sampling, a chain of custody sheet will be completed and submitted to the laboratory. The chain of custody sheet will include the project name, the sampler's signature, the sampling locations, intervals, and analysis parameters requested. A copy of the Chain of Custody is included as part of the report.

6.6.3 QA/QC Samples

QA/QC samples will be obtained during the soil/sediment sampling. During soil/sediment sampling, one (1) equipment blank per day per matrix sampled will be prepared by pouring laboratory-supplied, deionized water through either the sampling bailer or the hand auger and into a set of sample containers. The equipment blank will be tested for the same analyses as the matrices to be sampled that day. If more than one (1) decontamination event occurs in one (1) day, the same person will perform the decontamination to maintain uniformity in the procedure. The equipment blank results will be reviewed to evaluate the potential for field or laboratory contamination and will attest to the quality of the decontamination procedures.

In addition, blind duplicate samples for each matrix will be obtained to attest to the precision of the laboratory.

6.7 Sample Analysis

All samples will be submitted to a NYS DOH ELAP CLP-certified laboratory. Laboratory testing and data reporting will be performed by a subcontracted laboratory. The proposed subcontractor laboratory is Industrial Corrosion Management Inc., New Jersey.

All samples will be analyzed for TCL Volatiles and TAL Metals, with NYS DEC CLP Category "B" deliverables.

6.8 Data Validation

All samples obtained and analyzed will be subjected to data validation by an independent contractor using NYS DEC ASP "95 Rev." and EPA Region II Functional Guidelines. The proposed data validation subcontractor is LAB Validation Corp., East Northport, New York. The data validation will verify that the analytical results are of sufficient quality to be relied upon to assess the potential contamination in the soil in the vicinity of the possible sources of on-site contamination. The results of the data validation will be presented as an appendix to the report.

Samples will be tracked through the field collection, laboratory analysis, and laboratory report preparation processes. Kempey Engineering and GCI Inc. will perform the sample tracking and assemble the analytical results as they are received.

6.9 Data Evaluation

Data collected during the Remedial Investigation/Feasibility Study (RI/FS) will be assembled, reviewed, and evaluated to assure satisfaction of the RI/FS work plan objectives.

The data collected will be organized and analyzed to identify the nature and extent of contamination in the site soil/sediment, and to further identify potential on-site sources of contaminants.

The soil quality data will be evaluated and mapped to illustrate the areal and vertical extent of the contaminants detected. The distribution of soil contaminants detected will be considered to evaluate potential sources of contaminants.

Maps and tables of the data from the previous sampling programs and from the RI will be used to assist in the analysis. The results of the data evaluation will be discussed in the Remedial Investigation / Feasibility Study (RI/FS) Report.

6.10 Assessment of Potential Remedial Alternative

After existing and newly-acquired data are evaluated, the potential remedial objectives and alternatives will be developed, if appropriate.

6.11 Remedial Investigation Report Outline

After completion of the field investigation, sample analysis, data evaluation, and assessment of potential remedial alternatives, Kempey Engineering and GCI Inc., will prepare a Remedial Investigation / Feasibility Study (RI/FS) report. The report will contain a summary of results from previous sampling events as well as the data and analyses performed as part of this investigation.

A Remedial Investigation/ Feasibility Study (RI/FS) report format is presented in Table 1.

TABLE 1

Remedial Investigation / Feasibility Study (RI/FS) Report

Table of Contents

SECTION		DESCRIPTION
		Disclaimer
1.0		**Introduction**
	1.1	Overview
	1.2	Site Investigation Approach
	1.3	Report Contents
2.0		**Site Background and Setting**
	2.1	Site Location
	2.2	Site History
	2.3	Current Conditions
3.0		**Environmental Setting**
	3.1	Topography and Drainage
	3.2	Population and Environmental Resources
	3.3	Regional Geology
	3.4	Regional Hydrogeology
4.0		**Characteristics of Chemical Contamination Based on Previous Investigations**
	4.1	Potential Contamination Sources
	4.2	Chemical Characteristics of Soil
	4.3	Chemical Characteristics of Groundwater
	4.4	Discussion of Chemical Analytical Results
	4.5	Identification of Additional Data Needs

5.0 Site Investigation Tasks

5.1 Sediment Sampling

5.2 Soil Sampling

5.4 Quality Assurance/Quality Control

6.0 Site Investigation Results

6.1 Soil Chemical Analytical Results

6.2 Sediment Chemical Analytical Results

6.4 Discussion

6.4.1 Extent of Soil Contamination

6.4.3 Summary

7.0 Assessment of Potential Remedial Alternatives

8.0 Summary and Conclusions

6.12 Estimated Schedule of the Remedial Investigation Activities

Table 2 presents the estimated schedule for the execution of the Remedial Investigation Activities.

TABLE 2

Estimated Time Schedule for the Remedial Investigation (RI)

Precision Concepts
26 Precision Drive
Shirley, New York

Task	Description	Time In Weeks															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Conduct Field Investigation:	X	X	X	X												
2	Laboratory Analysis					X	X	X									
3	Conduct Additional Sampling (If necessary)								X	X							
4	Data Evaluation										X	X	X	X			
5	Report Submission														X	X	X

6.13 Miscellaneous

The project manager for this project will be Eugene G. Kempey, P.E. The field supervisor will be Matthew Boeckel. The drilling firm will be Impact Environmental Inc. The Quality Assurance Officer (QAO) will be Matthew Boeckel.

The laboratory results and method detection limits for each analyze in each matrix will be as per NYS DEC ASP Revision 12/91 Category "B" requirements. Table 3 shows the number of samples to be collected, matrices, holding time, analytical protocols, and estimated number of QA/QC samples.

TABLE 3

Sample containers, Preservation, Holding Times,

And Analysis Methods

Sample Matrix	Number of Samples	Parameters	Containerization Type	Preservation	Holding Time	NYS DEC Analysis Method
Soil	11	VOCs	Glass Jar with Teflon Liner	4°C (Zero Headspace)	7 days	TCL Volatiles
Soil	11	Metals	Plastic Jar	4°C	6 months	TAL Metals
QA/QC	5	VOC/Metal	Glass Jar with Teflon Liner & Plastic Jar	4°C (Zero Headspace)	7 days/ 6 months	TAL Metals & TCL Volatiles

Notes: - Field blanks and trip blanks will be obtained at a rate of one (1) per day.

- The laboratory will report the data in a NYS DEC Category "B" deliverables package.

- Holding times begin on the date the sample received by the laboratory. Samples must be received by the laboratory within 48 hours of sampling.

APPENDIX A

1. View as seen looking east along Precision Drive from subject site.

2. View as seen looking west along Precision Drive from subject site.

5. View of the front (north) side of the subject building.

6. View of the rear (south) side of the subject building.

7. View of the east side of the subject building.

8. View of the west side of the subject building.

9. View of the adjacent properties located north of the subject site.

10. View of the adjacent properties located south of the subject site.

APPENDIX B

SUFFOLK COUNTY
GROUNDWATER INVESTIGATION REPORT:
NORTH SHIRLEY, NEW YORK
OCTOBER - 1990

SUMMARY

Organic contamination in the form of trichloroethane (TCA) and dichloroethane (DCA), affecting the private wells of at least five homes in the area of Carleton Drive East, North Shirley, was found to be confined to a narrow plume with a length of approximately 3100 feet. The plume's source has been identified as emanating from an area of the Brookhaven R & D Plaza industrial park, located just north of the affected homes. Another contributing source of the contamination is the Brookhaven National Lab (BNL), which is located further upgradient (north) of both Brookhaven R & D Plaza and the affected homes, but which contributes low levels of these and other organic chemicals found at much greater depth than the principal plume.

BACKGROUND

In March of 1990, BNL informed the Suffolk County Department of Health Service Bureau of Drinking Water (SCDHS-BDW) that a test well (#130-2), located near the southern boundary of BNL and screened 80 to 90 feet below the water table was contaminated with traces of TCA and DCA (11 and 4 ppb, respectively).

In response to this finding, the SCDHS-BDW initiated a sampling survey of private wells downgradient of the contaminated BNL well. During the time period of March-June 1990, 90 private wells were sampled in an area of North Shirley, Town of Brookhaven, New York, bounded by Carleton Drive East, Wellwood Drive, Crestwood Drive and William Floyd Parkway. These samples were tested by the Suffolk County Department of Health Services' Public Health Laboratory (SCDHS-PHL) for trace organics (Table 1). Five of the private wells were found to be contaminated with the organic solvents 1,1,1-Trichloroethane (TCA) and 1,1-Dichloroethene (DCE). All five of these homeowner wells exceeded the New York State Health Department's drinking water standard of 5 parts per billion (ppb) for principal organic compounds. The concentrations detected ranged from 41 ppb to 340 ppb for the organic solvent TCA, and from 2 ppb to 20 ppb for DCE.

From May to October 1990, twenty groundwater monitoring wells (Fig. 1) were installed by the Suffolk County Department of Health Services' Bureau of Groundwater Resources (SCDHS-BGR). The monitoring program was designed to determine the prevailing groundwater flow direction, and if possible, the origin of the contamination.

An additional goal of the program was to map out the impacted area, and secure enough data to support the extension of public water mains under the Federal Superfund Program.

WELL INSTALLATION AND SAMPLE COLLECTION

The SCDHS-BGR's Mobile B-53 hollow stem auger rig was employed to drill the wells. Drilling was done with 3 1/4" I.D. by 6 1/2" O.D. hollow stem augers; the lead auger section was capped with an expendable plug to prevent formation cuttings from entering the augers. The borehole was advanced to the maximum depth deemed safe, i.e., with enough power left to retrieve the augers (typically less than 150 feet, averaging approximately 120 feet). After the desired depth was reached, a 2-foot stainless steel well point attached to two-inch steel casing sections (10 feet or 20 feet long) was lowered inside the hollow stem augers, and the expendable plug punched out. The auger sections were then removed, exposing the screen to the formation.

Water samples were obtained in 10-foot or 20-foot intervals by pumping the deepest setting first, and then pulling the well up either 10 feet or 20 feet and unscrewing the uppermost section of pipe. Since the static water level exceeded 30 feet, a suction pump could not be used. A single pipe jet pump system was employed to obtain samples for screen settings sufficiently below the top of the aquifer, and bailing was used for screen settings near the top of the aquifer. Priming of the jet pump system was accomplished by using clean potable water obtained from a Suffolk County Water Authority (SCWA) approved hydrant. Samples were collected after clear, silt-free formation water was obtained -- usually after pumping the well for 35-45 minutes (at a rate of 5-10 gpm). Bailed samples were collected only after the well was purged an equivalent of three casing volumes to ensure a representative groundwater sample.

WELL LOCATIONS AND SAMPLING STRATEGY

Well locations were selected along four east-west transects that run approximately perpendicular to the prevailing regional groundwater flow direction (approximately due south, Fig. 1). The objective of this strategy was to quickly determine the exact local groundwater flow direction, isolate the industry or industries causing the groundwater contamination, and determine the width, length and depth of the plume. The actual location of the wells were chosen utilizing the existing data on homeowner wells generated by the SCDHS-BDW, in conjunction with data collected by the Suffolk County Department of Health Services' Inspectional Service Section (SCDHS-ISS) from the leaching pool of one of the industries located in the Brookhaven R & D Industrial Park (1200 ppb of TCA were found in May of 1988).

The northern-most transect, along the south service road of the Long Island Expressway, was designed to determine groundwater quality upstream of the suspected industry in the Brookhaven R & D Industrial Park (Fig. 1) and to aid in determining groundwater elevations and directions. The second transect, along Natcon Drive in the Brookhaven R & D Industrial Park, was selected to determine if the suspect industry was emitting TCA contamination. The third transect, which was installed along Carleton Drive East, was designed to corroborate the groundwater contamination observed in the homeowners wells. The additional wells installed south of this transect were designed to determine the length of the plume along its spine.

GROUNDWATER DIRECTION

The regional groundwater table map (CONTOUR MAP OF THE WATER TABLE AND LOCATION OF OBSERVATION WELLS IN SUFFOLK COUNTY, NEW YORK MARCH 1990), prepared by the SCDHS-BGR, indicates a groundwater flow direction of due south in the study area. To confirm the accuracy of the regional groundwater flow direction, the SCDHS-BGR installed additional wells in the study area and utilized BNL wells and wells previously installed by the New York State Department of Environmental Conservation (NYSDEC) as part of an investigation of benzene contamination of individual domestic water supply systems just southwest of the study area.

The SCDHS-BRG groundwater wells used to determine the local groundwater flow direction were wells #1 - # 7 (Fig.-1). In addition to being used to determine water table elevations, these wells were also sampled to determine groundwater quality conditions. The BNL wells utilized in constructing the localized water table map were wells 115-01, 122-01, and 130-01; these wells appear on a water-level contour map prepared by Geraghty & Miller, Inc., entitled: BROOKHAVEN NATIONAL LABORATORY SOUTHERN BOUNDARY WATER-LEVEL CONTOURS, JULY 20, 1990 (attached). Some additional BNL wells were leveled in and measured, but due to the large areal coverage, these additional wells were not useful in determining the groundwater flow direction in the study area. The NYSDEC wells that were utilized to construct the local water table map were wells 17, 22, 29, 30, 31, 34, 36, 37, and 38; these wells appear in a report entitled: PRELIMINARY SUBSURFACE INVESTIGATION OF NORTH SHIRLEY, N.Y, -- SP# 87-4055, prepared by Marine Pollution, Inc. -- 16 March, 1988. In addition to these wells, SCDHS-BGR monitoring wells S-47750, S-51980, and S-62404 were employed as control wells (CONTOUR MAP OF THE WATER TABLE AND LOCATION OF OBSERVATION WELLS IN SUFFOLK COUNTY, NEW YORK MARCH 1990).

An accurate local water table map was constructed using the above wells and synoptic water level readings. The due south groundwater flow direction obtained from the regional water table map was confirmed for the study area (Fig. 1). The work done by Geraghty & Miller, Inc., also confirms that the groundwater flow direction is due south in the study area.

SUFFOLK COUNTY GROUNDWATER INVESTIGATION: NORTH SHIRLEY-4

SAMPLING RESULTS

The sampling effort was divided between the SCDHS-BDW and the SCDHS-BGR, with the BDW sampling private domestic wells in the study area, and the BGR installing and sampling groundwater profile wells. The sampling results of the BDW were summarized earlier in this report. The sampling results from the BGR drilling effort follow.

From May to October 1990, 20 groundwater monitoring wells (16 of which were groundwater profile wells) were installed and sampled by the SCDHS-BGR. As previously discussed, the wells were installed along east-west transects to facilitate the isolation of suspected sources of contamination.

The northern-most transect along the south service road of the Long Island Expressway just east of the William Floyd Parkway was designed to be upstream of the suspected industry in the Brookhaven R&D Industrial Park, and downstream of BNL, which was also a suspected source of the contamination found in the homeowner wells. This transect is comprised of groundwater profile wells #12, #21, #1, #20, #2, & #3 (in West to East order - Fig. 1). The data collected from these wells indicates low level organic contamination, (less than 16 ppb for TCA) extending 30 feet-110 feet below the water table, along the entire length of the transect (1500 feet). Other associated contaminants were found to be similarly distributed. Trichloroethene (TCE) and DCE ranged in concentration from non-detect (ND) to 6 ppb. Tetrachloroethene (PCE) was detected in well # 1 in concentrations ranging from 2 ppb to 5 ppb.

The Natcon Drive (also known as Precision Drive) transect is comprised of wells #7, #13, #11 & #10 (in West to East order). This transect was designed to ascertain if groundwater contamination was being caused by Precision Concepts Inc. (Fig. 1). In May of 1988, the SCDHS-ISS found 1200 ppb of TCA in a leaching pool located on the east side of the Precision Concepts building. Subsequent resampling on May 3, 1990 of this leaching pool which is used for non-contact cooling water (personal communication with Brian Robinson of SCDHS-ISS, October 1990), revealed no organic contamination at a detection limit of 40 ppb.

Significant TCA contamination was found at shallow depths in groundwater profile wells #11 & #13, which are located just south of the Precision Concepts building along Natcon Drive (Fig. 1). The contamination was spread out over approximately a 200 foot wide area and ranged in depth from 30 feet to 40 feet below the water table. The TCA concentration observed ranged from ND to 130 ppb in well # 13, and from 3 ppb to 9300 ppb in well # 11. In addition to the high concentration of TCA found at this level, other organics were also detected in significant concentrations.

Among these were Vinyl Chloride (1 ppb), 1,1, Dichloroethane (95 ppb) TCE (3 ppb), PCE (290 ppb), Cis 1,2 DCE (0.7 ppb), and 1,1-DCE (430 ppb). Minor concentrations (3 ppb - 7 ppb) of TCE and 1,1, DCE were found deeper in the aquifer (80 - 100 feet below the water table). This deeper contamination is of the same type and concentration as found in the South Service Road transect, and probably originates further upstream from past activities at BNL.

The Ramsey Road transect was mainly used in the determination of the groundwater flow direction. It consists of wells #4, #22, #5, and #6 (in West to East order), with well #22 being a groundwater profile well, and wells #4, #5 and #6 being water table wells (i.e. screened 10 - 20 feet below the water table). No organic contamination was detected in wells #5 and #6, and only traces of TCA (1ppb) and methylene chloride (2ppb) were detected in well #4. Groundwater profile well # 22 was installed to ascertain if the contamination observed in wells #11 & #13 could be found at this site. Relatively low levels (3 ppb) of TCA were detected in the 0-10 foot level, while 29 ppb of TCA was found in the 31 - 40 foot interval below the water table (Fig. 1).

The Carleton Drive East transect was installed to try to corroborate the contamination observed in the homeowner wells along Carleton Drive East near its intersection with Freestate Drive (Table 1 & Fig. 1). As previously indicated, the TCA contamination of the homeowner wells ranged from 41 ppb to 340 ppb at a depth of 40 feet to 60 feet below the water table (based on information provided by homeowners who knew their well depths). Wells #14, #15, and #16 were clean except for traces of chloroform (less than 2 ppb). Well #17 was contaminated with traces of TCA: 1 ppb at the 0-10 foot level, and 5 ppb at the 21-30 foot level. Some additional organic contaminants were found at the 51-60 foot level below the water table: 17 ppb of DCE, 1 ppb of Bromodichloromethane, 0.9 ppb of Chlorodibromomethane, 0.6 ppb of DCE, and 4 ppb of Chloroform.

The final two wells installed, well #18, and #19, comprise the Moriches Middle-Island Road transect. These wells were installed to determine the length of the contamination plume. Well # 18 was found to be clean at all the levels tested (Fig. 1). This was a surprising result, since 41 ppb of TCA was found in a homeowner well directly across the street from well # 18 (Table 1). Well # 19 was also found to be clean, except for traces of chloroform (1ppb) at the 55 foot and 68 foot levels (Fig. 1). These two wells, which are located some 3400 feet downgradient of the suspected source, do not show signs of being impacted, or having been impacted, by the suspected source.

SUFFOLK COUNTY GROUNDWATER INVESTIGATION REPORT: NORTH SHIRLEY-6

CONCLUSION

The cooperative effort of the SCDHS's BDW, BGR and ISS resulted in the identification of an area north of Natcon Drive and south of the Long Island Expressway , occupied by Precision Concepts, Inc., as the major source of the contamination observed in the homeowner wells. High concentrations of TCA, ranging in value from 130 to 9300 ppb, were found in wells #11 and #13 at depths of 10 to 40 feet below the water table, immediately downgradient of the area occupied by Precision Concepts, Inc. These two wells are located approximately 600 feet downgradient of a dry well (located just east of the Precision Concepts, Inc. building) that had 1200 ppb of TCA contamination in May of 1988 (Fig. 1).

The local groundwater flow direction was found to be due South, which has created a narrow (less than 300 feet wide) plume approximately 3100 feet long, emanating from the major source. The regional groundwater flow velocity ranges from 1.5 to 2.0 feet per day. As it moves south the plume is spreading slightly and sinking slowly with minimal dilution. The ultimate fate of the contamination is to move deeper in the flow system, and ultimately discharge to saltwater at the south shore groundwater boundary.

A contributing source of contamination of the deeper parts of the aquifer is BNL. Ubiquitous TCA and DCA contamination of less than 20 ppb has been observed along a 1500 foot wide transect just south of the LIE at depths of 60 to 110 feet below the water table.

RECOMMENDATIONS

The SCDHS-BRG's initial investigation found that the major source of TCA contamination in the homeowner wells is located south of the Long Island Expressway and north of Natcon Drive, an area occupied by Precision Concepts for the last eight years. A consulting firm should be hired by this company to continue the investigation on site and to carry out the following recommendations:

1. Inventory all chemicals employed at this facility since its occupation by Precision Concepts to determine storage, usage, disposal, and haulage histories.

2. Determine why TCA was found in 1988 in a leaching pool that was supposed to be used only for non-contact cooling water.

3. Drill additional on site wells to determine the actual area from which the contamination originated.

4. Remove any active source that is found, and modify the responsible process or processes to comply with the Suffolk County Sanitary Code.

5. Prepare a report on the findings and certify to the satisfaction of the SCDHS-ISS that all activities associated with manufacturing processes comply with the Suffolk County Sanitary Code.

6. Remediate the effects of the contamination on the private homeowner wells by paying the cost of watermain extension and hook-up of the affected homes.

In addition to the above recommendations BNL should initiate the following steps to deal with the low level of ubiquitous contamination emanating from their property:

1. BNL should have their consultant Geraghty & Miller Inc. do a review of past to present chemical usage and disposal practices. All ongoing activities should be brought in compliance with the Suffolk County Sanitary Code.

2. BNL should install additional wells along their southern boundary to determine the width of the observed contamination; more wells should then be installed to determine the areal onsite extent and, if possible, the source(s) of this contamination. If found to be active they should be removed.

3. A report should be prepared by the consultant outlining their findings and recommendations and submitted to the SCDHS for review.

90 wells tested

CARLETON DRIVE EAST, SHIRLEY

as of August 13, 1990

TAX MAP NUMBER	WELL DEPTH	1,1 DCA	CHLOR O FORM	1,1,1 TCA	CHLOR DIBRO METHN	1,1 DCE	BROMO DICHL METHN	SAMPLE DATE
200-615-2- 2	-	ND	1.	ND	ND	ND	ND	042490
200-615-2- 3	-	ND	0.9	ND	ND	ND	ND	032190
200-615-2- 4	-	ND	1.	ND	ND	ND	ND	032190
200-615-3-18.1	-	ND	0.7	ND	ND	ND	ND	041290
200-615-2- 7.2	-	4.	1.	340.	ND	20.	ND	041290
	-	4.	2.	210.	ND	13.	ND	062090
200-615-3-18.2	-	ND	ND	75.	ND	4.	ND	041290
200-615-2- 7.1	120	0.8	1.	260.	0.5	14.	0.7	032190
	120	0.9	1.	180.	ND	11	ND	062090 TTE 0.9
200-615-2- 8	-	ND	0.6	44.	ND	2.	ND	041290
	-	ND	ND	44.	ND	2.	ND	062090 TTE 0.7
200-615-4- 1	-	ND	ND	ND	ND	ND	ND	042490
200-615-2-12	-	ND	ND	ND	ND	ND	ND	032190
200-615-2-21	100	ND	ND	ND	ND	ND	ND	032190
200-615-2-13	100	ND	0.8	ND	ND	ND	ND	052290
200-615-2-14	-	ND	0.5	ND	ND	ND	ND	060490
200-615-2-15	-	ND	0.9	ND	ND	ND	ND	053090
200-615-2-17	-	ND	1.	ND	ND	ND	ND	032190
200-615-2-18	-	ND	0.8	ND	ND	ND	ND	032190
200-615-2-19	120	ND	0.9	ND	ND	ND	ND	052290
200-615-2-20	110	ND	1.	ND	ND	ND	ND	052290
200-586-1- 2	-	ND	0.7	ND	ND	ND	ND	052290
200-586-1 -3	-	ND	0.8	ND	ND	ND	ND	012590
200-586-1-6	130	ND	2.	ND	ND	ND	ND	052290
200-586-1-7	-	ND	1.	ND	ND	ND	ND	053090
200-586-1-8	-	ND	1.	ND	ND	ND	ND	071690
200-586-1-10	-	ND	1.	ND	ND	ND	ND	052290
200-586-1-11	-	ND	1.	ND	ND	ND	ND	052290
200-586-1-12	120	ND	0.8	ND	ND	ND	ND	052290

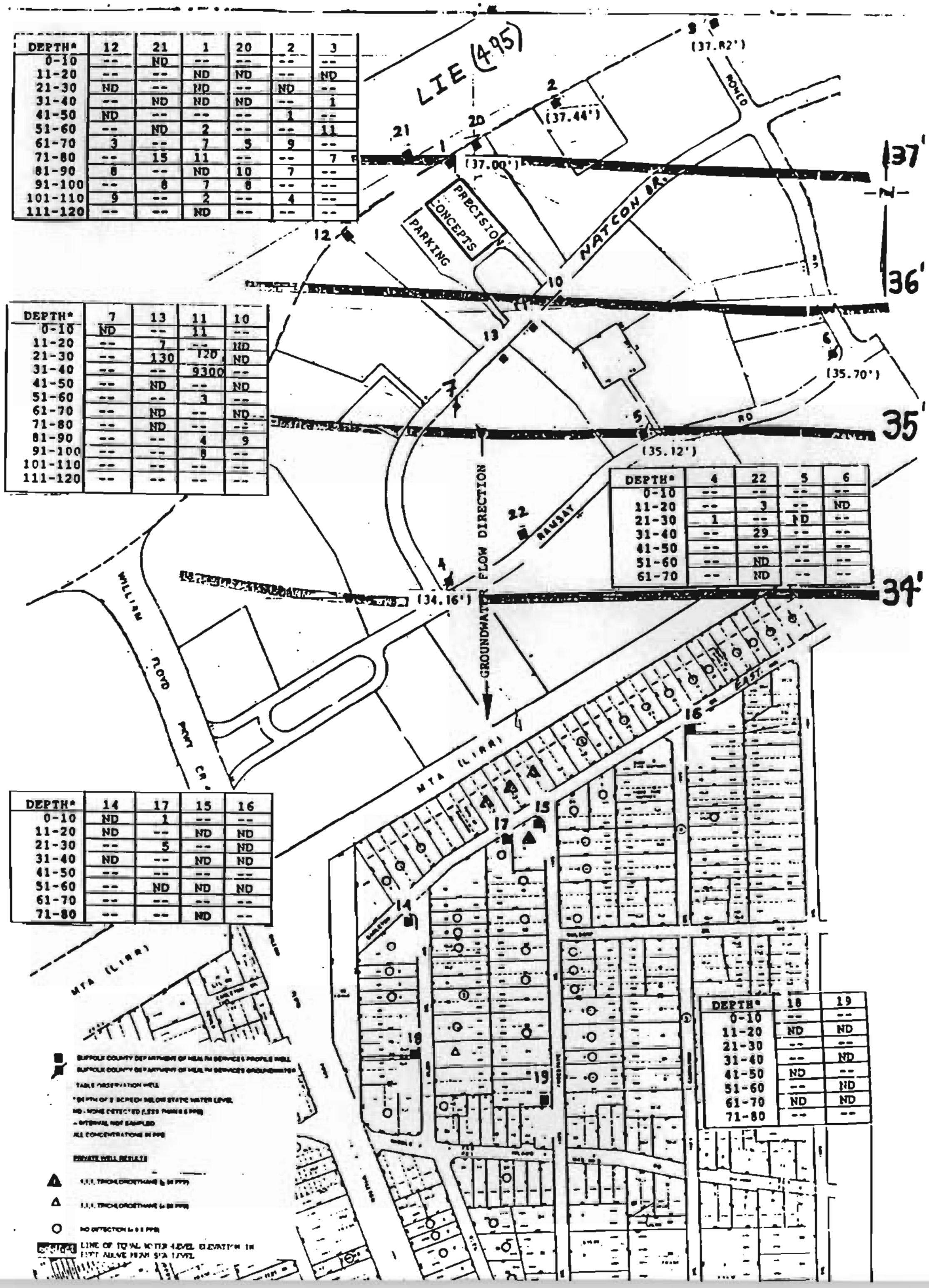
CARLETON DRIVE EAST, SHIRLEY

TAX MAP NUMBER	WELL DEPTH	1,1 DCA	CHLOR O FORM	1,1,1 TCA	CHLOR DIBRO METHN	1,1 DCE	BROMO DICHL METHN	SAMPLE DATE
200-586-1-13	80	ND	1.	ND	ND	ND	ND	052290
200-586-1-15	180	ND	2.	ND	ND	ND	ND	052290
200-586-1-18.2	-	ND	2.	ND	ND	ND	ND	053090
200-586-1-18.3	100	ND	ND	ND	ND	ND	ND	053090
200-586-1-19	-	ND	ND	ND	ND	ND	ND	061390
200-586-1-20	-	ND	ND	ND	ND	ND	ND	062890
200-586-1-22	-	ND	0.9	ND	ND	ND	ND	053090
200-586-1-24	-	ND	2.	ND	ND	ND	ND	060490
200-586-1-25	100	ND	2.	ND	ND	ND	ND	060490
200-586-1-26	-	ND	1.	ND	ND	ND	ND	060490
200-586-2-27	110	ND	1.	ND	ND	ND	ND	060490
200-586-1-32	90	ND	0.9	ND	ND	ND	ND	053090
200-586-1-34	-	ND	1.	ND	ND	ND	ND	053090
200-586-1-35	120	ND	2.	ND	ND	ND	ND	053090
200-586-3-19	-	ND	2.	ND	ND	ND	ND	053090
200-586-1-37	-	ND	0.8	ND	ND	ND	ND	060490
200-586-1-38	-	ND	0.9	ND	ND	ND	ND	061390
200-586-1-39	-	ND	1.	ND	ND	ND	ND	061390
200-586-1-40	-	ND	1.	ND	ND	ND	ND	061390
200-586-1-41	93	ND	1.	ND	ND	ND	ND	061390
200-586-1-42	107	ND	2.	ND	ND	ND	ND	061390
200-586-1-45	90	ND	0.6	ND	ND	ND	ND	060490
200-555-1-3	108	ND	2.	ND	ND	ND	ND	060490
200-551-1-7.1	-	ND	1.	ND	ND	ND	ND	060490
200-555-1-8	100	ND	1.	ND	ND	ND	ND	060490
200-555-1-11	90	ND	1.	ND	ND	ND	ND	061390

CARLETON DRIVE EAST, SHIRLEY

TAX MAP NUMBER	WELL DEPTH	1,1 DCA	CHLOR O FORM	1,1,1 TCA	CHLOR DIBRO METHN	1,1 DCE	BROMO DICHL METHN	SAMPLE DATE
200-642-3-43	-	ND	ND	ND	ND	ND	ND	062590
200-642-3-41.5	-	ND	ND	ND	ND	ND	ND	062590
200-584-1-2.2	-	ND	1.	ND	ND	ND	ND	032190
200-642-4-2.1	-	ND	1.	ND	ND	ND	ND	042390
200-642-4-37	-	ND	0.6	ND	ND	ND	ND	062590
200-615-5- 8	108	ND	0.7	ND	ND	ND	ND	042390
200-615-3-23	-	ND	0.7	ND	ND	ND	ND	042690
200-615-5- 7	-	ND	0.7	ND	ND	ND	ND	042490
200-615-5- 6	115	ND	ND	ND	ND	ND	ND	042390
200-615-5- 5	-	ND	ND	ND	ND	ND	ND	042390
200-615-5- 4	-	ND	ND	ND	ND	ND	ND	042590
200-615-3-21	-	ND	ND	ND	ND	ND	ND	050790
200-615-5- 3	-	ND	ND	ND	ND	ND	ND	042690
200-615-5-1	-	ND	ND	ND	ND	ND	ND	062590
200-615-3-27	-	ND	ND	ND	ND	ND	ND	042390
200-615-3-20	-	ND	ND	ND	ND	ND	ND	042390
200-615-3-19	-	ND	0.9	ND	ND	ND	ND	042390
200-615-4- 2	-	ND	0.6	ND	ND	ND	ND	041290
200-615-4- 3	100	ND	ND	ND	ND	ND	ND	042590
200-615-4-29	-	ND	1.	ND	ND	ND	ND	041290
200-642-4-30	-	ND	ND	ND	ND	ND	ND	070990
200-642-4-31	100	ND	0.8	ND	ND	ND	ND	062590
200-642-4-7	-	ND	ND	ND	ND	ND	ND	061390
200-642-4-6	97	ND	ND	ND	ND	ND	ND	061390
200-642-4-33	105	ND	0.6	ND	ND	ND	ND	062590

TAX MAP NUMBER	WELL DEPTH	1,1 DCA	CHLOR O FORM	1,1,1 TCA	CHLOR DIBRO METHN	1,1 DCE	BROMO DICHL METHN	SAMPLE DATE
200-642-4-5	-	ND	0.6	ND	ND	ND	ND	061390
200-642-4-40	90	ND	0.8	ND	ND	ND	ND	050790
200-615-3- 8	120	ND	1.	41.	ND	2.	ND	042390
200-615-3- 9	-	ND	0.8	ND	ND	ND	ND	050790
200-615-3- 4	98	ND	1.	ND	ND	ND	ND	050790
200-615-3- 2	-	ND	1.	ND	ND	ND	ND	050790
200-615-3-12.2	-	ND	1.	ND	ND	ND	ND	042390
200-615-3- 1	-	ND	1.	ND	ND	ND	ND	050790
200-615-3-13	-	ND	1.	ND	ND	ND	ND	042390
200-615-3-14	-	ND	ND	ND	ND	ND	ND	041290
200-615-4-14.1	80	ND	0.8	ND	ND	ND	ND	041790
200-615-4-28	-	ND	0.6	ND	ND	ND	ND	042390
200-616-5-23	-	ND	0.7	ND	ND	ND	ND	062090



DEPTH*	12	21	1	20	2	3
0-10	--	ND	--	--	--	--
11-20	--	--	ND	ND	--	ND
21-30	ND	--	ND	--	ND	--
31-40	--	ND	ND	ND	--	1
41-50	ND	--	--	--	1	--
51-60	--	ND	2	--	--	11
61-70	3	--	7	5	9	--
71-80	--	15	11	--	--	7
81-90	8	--	ND	10	7	--
91-100	--	8	7	8	--	--
101-110	9	--	2	--	4	--
111-120	--	--	ND	--	--	--

DEPTH*	7	13	11	10
0-10	ND	--	11	--
11-20	--	7	--	ND
21-30	--	130	120	ND
31-40	--	--	9300	--
41-50	--	ND	--	ND
51-60	--	--	3	--
61-70	--	ND	--	ND
71-80	--	ND	--	--
81-90	--	--	4	9
91-100	--	--	8	--
101-110	--	--	--	--
111-120	--	--	--	--

DEPTH*	4	22	5	6
0-10	--	--	--	--
11-20	--	3	--	ND
21-30	1	--	ND	--
31-40	--	29	--	--
41-50	--	--	--	--
51-60	--	ND	--	--
61-70	--	ND	--	--

DEPTH*	14	17	15	16
0-10	ND	1	--	--
11-20	ND	--	ND	ND
21-30	--	5	--	ND
31-40	ND	--	ND	ND
41-50	--	--	--	--
51-60	--	ND	ND	ND
61-70	--	--	--	--
71-80	--	--	ND	--

DEPTH*	18	19
0-10	--	--
11-20	ND	ND
21-30	--	--
31-40	--	ND
41-50	ND	--
51-60	--	ND
61-70	ND	ND
71-80	--	--

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
AND
PHASE II SUBSURFACE INVESTIGATION

COMMERCIAL BUILDING
26 PRECISION DRIVE
SHIRLEY, NEW YORK 11967

GCI Project No. 960102

Prepared For:

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Winston Salem, North Carolina 27101

Inspection Date: January 31, 1997

Subsurface Investigation Dates:
May 16, 1996
January 24, 1997
January 31, 1997

Report Date: February 18, 1997

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REPORT SPECIFICATIONS

This report contains seventy-two (72) pages of text.

Copies and circulation of this report are as follows:

Two (2)	Bound copies to Mr. Vince Marino.
One (1)	Copy in the confidential client file at General Consolidated Industries, Inc.
One (1)	Copy on security protected computer disk at General Consolidated Industries, Inc.

This report is prepared for the exclusive use of parties noted above and is considered private and strictly confidential. General Consolidated Industries, Inc. shall not release this report or any of the findings of this report to any person or agency except with the authorization of the principal parties noted above.

1.0 INTRODUCTION

General Consolidated Industries, Inc. (GCI) has been retained to prepare an updated Phase I Environmental Site Assessment and Phase II Subsurface Investigation for the property located at 26 Precision Drive, Shirley, Town of Brookhaven, Suffolk County, Long Island, New York. GCI has prepared this assessment in accordance with the general requirements of "due diligence" in order that secured creditors may be classified as "innocent landowners" under the Superfund Amendments and Reauthorization Act (SARA 1986). The assessment has been completed by qualified professionals in accordance with the specific requirements established by the American Society for Testing and Materials (ASTM), as well as all industry standards for evaluating collateral risk during the performance of an environmental assessment.

1.1 Objectives / Scope of Work

The objective of this environmental assessment is to review the existing and former conditions and utilization of the site to assess potential liability with respect to the presence of hazardous materials that may pose a potential environmental or human health threat. Please note that a Phase I Environmental Site Assessment report dated August 14, 1995 was originally prepared for the subject site. The objective of this report is to update all Phase I information as well as incorporate the findings of all Phase II Subsurface Investigation work conducted at the site. Environmental threats would include, but not be limited to, hazardous/toxic wastes or raw chemicals stored, dumped or spilled on premises, underground storage of hazardous materials, friable asbestos, and identification of potential off-site sources of hazardous waste contamination such as releases from storage facilities adjacent to the subject site.

1.2 Methodology

To complete the environmental assessment, the following procedures were conducted:

1) A detailed field inspection of the subject site was performed including all accessible areas of the building(s) interior, exterior, property grounds and site perimeter.

2) Facility management personnel were interviewed concerning activities conducted at the subject site, past and present.

3) Neighboring property utilization was evaluated to determine potential impact on subject site.

4) The following federal and state regulatory agency documents were reviewed concerning the location of known hazardous waste sites proximal to the subject site: CERCLIS, National Priorities List, RCRIS-TSD, RCRIS Generators, ERNS, Inactive Hazardous Waste Disposal Sites, Landfills and/or Solid Waste Disposal Sites, Leaking USTs, Registered USTs, and New York State Department of Environmental Conservation (NYS DEC) Spill File.

5) Research was conducted through the Suffolk County Department of Health Services (SCDHS) and the Town of Brookhaven for the number, size and date of installation of any storage tanks, as well as any previous or existing violations.

6) Research was conducted on files held at the Town of Brookhaven to compile a chain-of-ownership of the subject site to identify past owners and possible uses of the property.

7) A total of six (6) soil borings were installed throughout the subject property, with respect to possible on-site and off-site contamination sources. In addition, the remediation of a collection pit was conducted.

8) Representative samples from the soil borings, drywells and collection pit were submitted for laboratory analysis utilizing EPA Method 624 as well as the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools".

9) A search was made for sensitive ecological areas and regulated wetlands in the vicinity of the subject site.

Evaluations, conclusions and recommendations are submitted based on the careful consideration of the results of the above research. Recommendations are formulated with respect for maintaining the collateral value of the property. This report is intended to assess the threat to human health and/or the collateral value of the property. It is generally not within the scope of this report to perform intrusive or aggressive testing of suspect materials observed at the site. Materials will be identified as environmentally suspect, however, a representative sampling procedure is required to fully assess the occurrence of the following materials: electrical devices containing PCBs and the occurrence of radon gas.

The accuracy of presenting the findings of this environmental assessment was considered of paramount importance during the formulation of this report. However, the report's accuracy is limited to the information available from interviews, records, files and plans released by the property owner and/or his representatives and/or the respective regulatory agencies, their attorneys and information officers. The above mentioned parties interest in issues presented herein is unknown to GCI. GCI expressly reserves its common law copyright and other property rights in this report. This report is not to be reproduced, changed or copied in any form or manner whatsoever, nor is it to be assigned to any third party without first obtaining the express written permission and consent of GCI.

Matthew Boeckel
Senior Hydrogeologist
General Consolidated Industries Inc.

Tom P. Smyth
President
General Consolidated Industries, Inc.

2.0 SITE DESCRIPTION

A field inspection of the subject site was completed by GCI Senior Hydrogeologist, Mr. Matthew Boeckel on January 31, 1997. The property was surveyed by inspecting the building interior(s) on a room by room basis; areas of particular note were the sources of building heat, the structure's thermal and pipe insulation and areas where there was storage of chemicals or hazardous materials. The exterior was inspected by walking the grounds with special attention given to the perimeter of the site, point sources of discharge or emission, injection wells, drywells, aboveground storage facilities, storage drums, and aboveground connections to underground storage tanks (USTs). The survey was conducted with the assistance of Mr. Eugene Kempey, P.E. and a representative of the facility. The activities conducted in every part of the property were identified for the purpose of determining potential environmental threats, of interest were the waste handling procedures, storage of hazardous materials and neighboring activities. Photographs were also taken of the subject site, please see Appendix E - Site Photographs.

2.1 Site Location

The subject site is located at 26 Precision Drive (AKA Natcon Drive), 1,343 feet east of William Floyd Parkway, abutting Roned Road on the east side, south of the Long Island Expressway South Service Road, Town of Brookhaven, Suffolk County, Long Island, New York. A copy of the Area Map - Figure 4.0 and the Tax Map - Figure 5.0, and the Site Plan - Figure 6.0 are included as part of the report.

Ownership Information: Industrial Development Agency (Precision Concepts)
3233 Route 112
Medford, N.Y. 11763

Tax Map Number:

Section	584.00
Block	01.00
Lot	04.034

Site Dimensions: The parcel is an irregular rectangular shaped parcel, with approximately 1,355 feet of frontage along the south side. The property is approximately 900 feet deep. The total subject parcel is approximately 636,000 square feet or 15.9 acres. The building itself occupies approximately 6% of the subject site. The remainder of the property is developed as perimeter buffer and parking areas for the facility.

Sources:

The following agencies and/or sources were contacted in the formulation of this assessment report.

1. U.S. Environmental Protection Agency (US EPA)
2. New York State Department of Environmental Conservation (NYS DEC)
3. New York State Department of Health (NYS DOH)
4. Suffolk County Department of Health Services (SCDHS)
5. Town of Brookhaven (TOB)
6. Suffolk County Water Authority (SCWA)
7. Suffolk County Sewer District (SCSD)
8. Long Island Lighting Company (LILCO)

2.2 Site Characteristics

The subject site is a single lot parcel, improved by a commercial warehouse/office building, which is currently occupied by "Luitpold Pharmaceutical". The subject property was originally developed for use as a commercial/industrial facility with on site parking areas.

The subject building is constructed of concrete block with brick veneer. The building rests on a poured concrete slab foundation. Windows are comprised primarily of bronze plate glass in aluminum frames.

The building space consists of office areas along the north end, reception/waiting area, conference room, lunch room, storage rooms, a research and development lab, office areas, bathrooms (office and warehouse), loading area and three (3) warehouse storage areas along the south end.

The office section and primary entrance to the building is accessible from the north and west sides. Four (4) overhead bay doors access the warehouse/storage areas from the south side. All office areas are finished with carpeted floors, sheetrock walls and suspended acoustic ceilings. All manufacturing/storage areas remain unfinished with poured concrete floors, concrete walls and steel corrugated ceilings/roof deck.

The heat for the site is provided to the warehouse areas of the building via gas and electric fired, ceiling mounted forced hot air systems. All other areas including offices and research and development areas are heated via a gas fired, WEIL McLAIN boiler/circulating hot water baseboard system.

The primary roof of the building was observed to be a flat/terraced type. Storm water runoff at the building is directed to internal drains that reportedly are piped to the on-site drywells.

The electric and gas service for the entire subject site is supplied by Long Island Lighting Company (LILCO). The drinking (potable) water is supplied by the Suffolk County Water Authority (SCWA). All sanitary discharges are directed to the on-site sanitary cesspool system.

The building and the surrounding property were observed to be maintained in good condition.

Utilities:
The site is serviced by the following utilities:

- Electrical service is provided by Long Island Lighting Company (LILCO).
- The gas service is provided by Long Island Lighting Company (LILCO).
- Water is supplied by the Suffolk County Water Authority (SCWA).
- Sanitary discharges connected to the on-site cesspool system.

Site Security:
The potential for vandalism type dumping of hazardous material on the property is considered moderate to high. The property is very secluded and situated on a very low traffic, secondary thoroughfare, which is poorly lighted. Access is provided to the property from Precision Drive (AKA Natcon Drive) via two (2) driveways. There are no gates or fencing existing at the driveway areas. The north side is bound by the LIE south service road.

Sewer / Storm Water Discharge & Drywells:
Sewage generated on site is reportedly directed to the on-site cesspool/septic tank.

Storm water at the parking areas is directed to several leaching pools including: two (2) leaching drywells located in the common parking area at the west side of the subject site, two (2) in the common parking area at the south side of the subject site, one (1) at the north end of the common parking area, and one (1) located in the lawn area at the west side of the subject building. Two (2) leaching drywells (DW-1 and DW-2) are located in the loading area along the south side of the subject site, based upon the location of DW-1 and DW-2 there was concern that the drywells may have received illegal discharges. In addition it was determined that there are two (2) buried drywells (DW-3 and DW-4) located west of the loading dock area which are utilized for collection of storm water from the roof. Based upon the fact that there was a "Y" connection on the roof drain inside the building which was not properly sealed, there was concern that the two (2) buried drywells may have received illegal discharges. A collection pit was discovered along the east side of the interior subject building wall. The pit was reportedly used for receiving

cooling water runoff. There was concern that the collection pit may have received illegal discharges. It was determined that an investigation of the drywells (DW-1 through DW-4) and the collection pit be conducted. The results of the drywell and collection pit investigation are summarized in Section 3.0 - Site Inspection / Subsurface Investigation.

There were no floor drains, slop sinks or other forms of subsurface discharge observed within the building at the time of the inspection.

Storage Drums:

Activities conducted at the subject site do entail the use and storage of drums. There is one (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development lab. According to documents provided, this drum contains waste corrosive liquid, Nos (D002), consisting of hydrochloric and sulfuric acids. This drum is stored in a designated hazardous waste storage cabinet, with good housekeeping practices observed. It was reported that Chemical Pollution Control, a licensed hazardous waste transporter, is responsible for picking up and disposing of all chemical wastes at the subject site.

2.3 Facility Operations: Current & Past Uses

The property has been occupied for industrial and warehouse use since originally constructed prior to 1985. There is no record that the building had ever been utilized for laboratory or x-ray processing, although metal stamping, soldering/assembling and cleaning were used by the company formerly occupying the subject site, known as Precision Concepts. Precision Concepts was a manufacturer of metal fixtures for use by the electronics industry. Precision Concepts operated its business from 1985 to 1991. There is record that there has been processing and storage of hazardous materials by Precision Concepts; although the normal operations, when conducted properly at the facility by the present uses carried out by Luitpold Pharmaceutical, Inc. would not appear to pose a threat to human health or the collateral value of the property.

There is no record that the building had ever been used for laboratory, metal plating or x-ray processing. There is record that there has been processing and storage of hazardous materials at the subject site. There is one (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development lab. According to documents provided, this drum contains waste corrosive liquid, Nos (D002), consisting of hydrochloric and sulfuric acids. This drum is stored in a designated hazardous waste storage cabinet, with good housekeeping practices observed. It was reported that Chemical Pollution Control, a licensed hazardous waste transporter, is responsible for picking up and disposing of all chemical wastes at the subject site.

The building as well as the property are both in good condition. The normal operations conducted at the facility by the present use, would not pose a threat to human health or the collateral value of the property, assuming proper industry standards are being adhered to.

2.4 Site Hydrology & Geology

Suffolk County, Long Island, New York is located in the Atlantic Coastal Plain physiographic province which is characterized by low hills of unconsolidated sands, gravel and silt. According to Franke (1972), regionally, the subsurface deposits consist of the Upper Glacial deposits that are characterized by southward sloping deposits of sand, gravel and silt. The Upper Glacial deposits have a maximum thickness of 600 feet. They are underlain by the Magothy, Raritan and Lloyd Formations. The Gardiners clay and the Jameco gravel separate the Upper Glacial deposits and the Magothy Formation along the south west portion of Long Island.

The subject site is in the Upper Glacial aquifer. The Upper Glacial has been designated a sole source aquifer by the US EPA, and as such is protected by US EPA mandated remediation legislation.

According to groundwater contour maps provided by the United States Geologic Survey (USGS) and the SC DHS groundwater is approximately forty (40) feet below ground surface at the subject site. Groundwater flows south under a regional hydraulic gradient of 0.001 ft/foot.

2.5 Groundwater Use

The use of local groundwater as a potable drinking water source can compound a property owners potential financial exposure and associated liabilities from subsurface contamination. GCI therefore evaluated the extent of the local groundwater usage in the area of the subject site.

Municipal water is supplied to most residences and businesses in the area, including the subject site, by the Suffolk County Water Authority (SCWA).

2.6 Adjacent / Surrounding Properties and Uses

A visual inspection of the adjacent and surrounding properties indicated that there were no properties posing an apparent environmental threat to the subject site. The site is located in a highly developed industrial neighborhood.

NORTH: South service road of Long Island Expressway (LIE), followed by LIE, followed by Brookhaven National Laboratory.

SOUTH: Precision Drive (AKA Natcon Drive), followed by wooded undeveloped land. A one story commercial/warehouse type facility occupied by METRO CORP., is located diagonally southeast.

- Similar in Nature and Use.

EAST: Vacant wooded property, followed by Roned Road, followed by vacant wooded property.

- Similar in Nature and Use.

WEST: Vacant/undeveloped wooded property.

2.7 Chemical Staining & Stressed Vegetation

A surface spill of petroleum hydrocarbon products or other chemicals may be absorbed onto the soil particles and retained in the near-surface sediments. Plant life near a spill will often be killed or will suffer stress from the contamination of the soil with these products. The condition of vegetative growth can be an indicator of near-surface soil conditions.

During the site inspection, GCI personnel did not identify any evidence of chemical spills such as soil staining or stressed vegetation, with the exception of minor staining of the pavement in the vicinity of the loading dock area. The stains are most likely the result of automotive fluid leaks from trucks and other vehicles frequently idling in this area.

A review of the New York State Department of Environmental Conservation (NYSDEC) records indicated that a release of petroleum occurred at the subject site on December 12, 1991. The records stated that approximately five (5) gallons of petroleum product had been spilled on land as a result of poor housekeeping practices. The NYSDEC was notified and Spill No. 9109772 was assigned to the site. The spill was cleaned-up at the site, and the NYSDEC was satisfied with the remedial efforts and closed the spill file on July 7, 1992. There is no further work required at this time.

2.8 Chemical Storage Facilities

The activities conducted at the subject site do entail the use and/or storage of chemicals. Small amounts of chemicals are used in the laboratory testing, research and development. These chemicals are stored very securely and are of insignificant quantity. There was one (1) - 55 gallon drum of hazardous waste chemicals stored in the research and development lab. According to documents provided, this drum contains waste corrosive liquid, Nos (D002) consisting of Hydrochloric and sulfuric acids. This drum is stored in a designated hazardous waste storage cabinet, with good housekeeping practices observed.

The New York State Department of Environmental Conservation Petroleum Bulk Storage (NYS DEC PBS) database records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91
Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91
Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91.

The Suffolk County Department of Health Services (SCDHS) records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91
Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91
Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91

2.9 Underground & Aboveground Storage Tanks (USTs & ASTs)

Site personnel were interviewed, site conditions reviewed, and research completed to determine whether any active or inactive underground storage tanks (USTs) are present, or ever were present at the subject site.

If found, active USTs must be tested by a qualified testing firm and certified to be in good condition, meeting the API and NFPA Standards for USTs; if deactivated USTs are found, verification must be provided that the abandoned tanks were deactivated in accordance with API or NFPA standards. If verification cannot be provided it is recommended that the UST be removed within API, NFPA, and US EPA guidelines.

During the site inspection, GCI personnel performed a visual search for on site underground storage tanks (USTs), any other storage tanks, as well as any evidence of storage tanks such as fill ports, vent lines or manways.

Inspection:
During the site inspection, GCI personnel did not identify any on-site underground storage tanks (USTs), aboveground storage tanks (ASTs) or any other storage tanks, nor any evidence of storage tanks such as fill ports, vent lines, manways or dispensers.

The New York State Department of Environmental Conservation (NYS DEC) Petroleum Bulk Storage (PBS) database was reviewed for any records of registered storage tanks at the subject site. The NYS DEC PBS database records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91

Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91

Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91

The Suffolk County Department of Health Services was contacted concerning any records retained by the agency with regard to storage tanks at the subject site. The Suffolk County Department of Health Services records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91

Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91

Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91

The Town of Brookhaven was contacted concerning any records retained by the agency with regard to storage tanks at the subject site. The Town of Brookhaven records indicated that the site had previously stored waste oil, degreasing solvent, waste acid and trichloroethane, as well as other hazardous chemicals. Please note that the records reviewed from the Town of Brookhaven and the Suffolk County Department of Health Services (SCDHS) were obtained during the performance of a Phase I Environmental Site Assessment dated August 14, 1995 conducted by GCI, Inc.

There were no other records of USTs, ASTs or other storage tanks located at the subject site, nor any sealed and/or removed tanks at the subject site. There was no additional evidence of storage tanks located at the subject site.

2.10 Hazardous Materials Generation, Use & Disposal

- The activities conducted at the facility do entail the generation, use or disposal of hazardous materials. One (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development lab. According to documents provided, the drum contains waste corrosive liquid, Nos (D002) consisting of hydrochloric and sulfuric acids. The drum is stored in a designated hazardous waste storage cabinet, with good housekeeping practices observed. Approximately fifty (50) gallons of this material is removed and transported by Chemical Pollution Controls Incorporated, 120 South 4th Street, Bayshore, NY, at two month intervals, as part of an ongoing program.

- The facility does store reportable quantities of regulated chemicals on site.

- The facility is not required to submit a SARA Title III Emergency Planning and Community Right-To-Know (EPCRA) Tier II form.

- The facility is not required to submit a SARA Title III Toxic Chemical Release Reporting (TCRR) Form R to the EPA.

- There are enforcement actions; judicial, administrative or negotiated consent orders; notice or demand letters; permit violations; fine proceedings; or other litigation, etc. pending by the state or federal agencies with respect to hazardous material management activities conducted at the facility, noted as follows:

  The Suffolk County Department of Health Services (SCDHS) has issued an Order of Consent to Precision Concepts (IW-91-0001 and IW-92-006), charging violation of Article 7 and Article 12 of the Suffolk County Sanitary Code. The SCDHS sampled the site during May, 1988; May, 1990; June, 1990; and November, 1990, charging that the company had discharged hazardous material during these periods causing the contamination of soil, groundwater and private wells located downstream of the site.

  The SCDHS filed a notice of Formal Hearing directing that Precision Concepts appear in connection with the violations listed as per the Consent Order - IW-91-0001 and IW-92-006, and further requesting that Precision Concepts submit proposals for performing soil and groundwater sampling; the installation of groundwater monitoring wells; perform on-site chemical inventories, and several other items.

The SCDHS nominated the Precision Concepts site (subject site) to the New York State Superfund program. The site is currently listed by the New York State Department of Environmental Conservation (NYSDEC) as an Inactive Hazardous Waste Disposal (IHWD) site. Based upon the fact that the subject property is listed as an IHWD site, it was determined that a Phase II Subsurface Investigation be conducted in order to determine possible on-site as well as off-site sources of contamination. Please refer to Section 3.0 - Site Inspection / Subsurface Investigation for a summary of events that have taken place at the subject site.

2.11 Solid & Hazardous Waste

- The facility does generate solid or hazardous waste other than refuse. One (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development laboratory. According to documents provided. the drum contains waste corrosive liquid, Nos (D002) consisting of hydrochloric and sulfuric acids.

- The refuse generated on site is placed in a holding/dumpster area located on-site. The waste is then disposed of by a municipal carter. During the inspection, no suspected hazardous waste was contained in the solid waste holding/dumpster area.

- The facility is required to maintain RCRA Hazardous Waste Permits.

- There are no analytical results regarding solid and/or hazardous wastes associated with the facility.

- There are hazardous waste transporters associated with and/or doing business with the site. Approximately fifty (50) gallons of the waste corrosive liquid material is removed and transported by Chemical Pollution Controls Incorporated, 120 South 4th Street, Bayshore, NY, at two (2) month intervals, as part of an ongoing program. The facility does not store any hazardous wastes for disposal on site for longer than 90 days.

- There are enforcement actions; judicial,administrative or negotiated consent orders; notice or demand letters; permit violations; fine proceedings; or other litigation, etc. pending or likely to be initiated by the state or federal agencies with respect to solid and/or hazardous waste management activities conducted at the facility.

2.12 Asbestos

GCI personnel performed a visual scan of accessible common areas for suspected asbestos containing material (ACM). Where a suspected asbestos material was observed, GCI determined the condition of the material and estimated the amount of suspect material.

The US EPA designated material with more than 1% asbestos as an Asbestos Containing Material (ACM). Where asbestos material is determined to be "Friable" (capable of being crushed by hand pressure and having a high potential to release airborne fibers), it is the recommendation of EPA that strong response action be taken. Such actions may take the form of removal, encapsulating, repair, enclosure and the implementation of an O & M (operations and maintenance) program. The response action is determined depending on the severity and nature of the individual situation.

Inspection:

Dropped acoustic ceiling tile was observed throughout the office areas of the subject building during the inspection. Based upon the type of ceiling tile, as well as the date of building construction and the renovations which have taken place over the course of the building's life, the presence of asbestos is not suspected.

Conclusion:

The site is acceptable for asbestos. There is no further action required at this time.

2.13 Poly-Chlorinated Biphenyls (PCBs)

Transformers:

There are three (3) types of transformers defined in the PCB regulations:

a. **PCB Transformer:** Any transformer containing 500 parts per million (ppm) PCBs or greater.

b. **Non-PCB Transformer:** Any transformer containing less than 50 ppm PCBs.

c. **PCB-Contaminated Transformer:** Any transformer containing 50-499 ppm PCBs. These transformers are not subject to parts of the regulations such as marking requirements or, if drained of liquid, to the disposal requirements. Any liquid drained from these transformers must be stored and disposed of in accordance with the regulations.

Transformers often contain dielectric liquid for the primary purpose of increasing resistance of the unit to arcing and acting as a heat transfer media, helping to cool the coils. The majority of transformers are filled with mineral oil, but a small percentage of these liquid-filled transformers contain PCB Askarel coolant liquid. The term "Askarel" is a generic term used for a group of nonflammable synthetic chlorinated hydrocarbons. All types of Askarels sold prior to 1979 contained 60 to 100 percent PCBs. Askarel transformers were manufactured in a variety of sizes, i.e. 3 to 3,000 gallons of PCB liquid, and are generally used in hazardous locations where flammability is of concern. PCB transformers are no longer produced because of EPA's ban on the manufacture of new equipment containing PCBs.

Inspection:

At the time of the inspection, there was one (1) ground based transformer located on-site, specifically at the northwest corner of the subject building. There was no evidence of staining due to leaking material in the vicinity of the transformer. In addition, it was reported by LILCO that there is no use of PCB oil in their transformers.

Conclusion:

The subject property is acceptable for PCBs in transformers. There is no further action required at this time.

Fluorescent Lighting:

There is fluorescent lighting within the subject building. However, based on the renovations that have taken place in the building, the presence of PCBs is not suspected.

Conclusion:

The subject site is acceptable for PCBs in fluorescent lighting. There is no further work required at this time.

2.14 Radon

Radon is a heavy colorless, odorless, radioactive gas formed by the radioactive decay of radium. Radon is associated with specific geologic formations which contain granite, uranium minerals, certain shales and phosphate related minerals. Radon, being a gas, can migrate to and accumulate in confined spaces such as building basements. Continued exposure of radon gas has been associated with increased lung cancer risk and possible genetic damage.

The US EPA and the Centers for Disease Control have used a continuous exposure level of 4.0 picocuries per Liter (pCi/L) or a 0.02 working level as a guidance level at which the US EPA recommends further testing and or remedial action to lower the concentrations.

The New York State Department of Health (NYS DOH), Bureau of Radiation Protection monitors radon levels throughout the state. There were 317 recorded test points located in Suffolk County and the average radon level was 1.6 Pci/L. The average radon level in a living area was 0.670 pCi/L and 100 % of these test points were less than 4 pCi/L. The average radon level in a basement area was 1.010 pCi/L and 98 % of these test points were less than 4 pCi/L. The chart details the full findings of the radon test of the NYS DOH.

NYS DOH RADON INFORMATION - SUFFOLK COUNTY

AREA	AVERAGE ACTIVITY	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.670 pCi/L	100 %	0 %	0 %
Basement	1.010 pCi/L	98 %	2 %	0 %

Conclusion:

Given this information, radon is not considered a significant environmental concern within the subject site. In addition, the subject site is not residential in nature, nor are there living spaces located below grade. The subject site is acceptable for radon. There is no further action required at this time.

2.15 Lead-Based Paint (LBP)

The subject site is improved by a commercial building. Being that the subject property was not residential in nature, the potential for lead-based paint (LBP) was not required to be scrutinized. Therefore, an on-site testing of painted surfaces for the presence of lead-based paint (LBP) was not performed.

3.0 SITE INSPECTION / TARGETED SUBSURFACE INVESTIGATION

The subject property has a history of hazardous chemical usage, as well as a history of environmental problems. The following is a partial chronological listing of the major chain of events as recorded by the SCDHS:

May 1988 • The SCDHS sampled a leaching pool located on the east side of the subject building, occupied at the time by Precision Concepts. The SCDHS found contamination of 1,200 parts per billion (ppb) of 1,1,1 Trichloroethane (TCA). Please note that the current action level for TCA listed by the Suffolk County Department of Health Services (SCDHS) is 1,600 ppb.

March 1990 • Brookhaven National Laboratory (BNL) which is located north of the subject site, and north of the Long Island Expressway informed the SCDHS that traces of 1,1,1 Trichloroethane (TCA) and Dichloroethene (DCA) were detected in a test well along their southern property line.

May 1990 • The SCDHS sampled the industrial leaching pool located on the east side of the subject building, occupied at the time by Precision Concepts. The SCDHS found no organic contamination at a detection limit of 40 ppb.

June 1990 • The SCDHS Public Health Laboratory subsequently performed a sampling survey of approximately ninety (90) homes located south of the expressway and south of the subject site (occupied by Precision Concepts), where private drinking water wells were sampled for trace organics. Of the ninety (90) private wells tested, five (5) wells were found to be contaminated with TCA and DCA.

May - Oct. 1990 • The SCDHS Bureau of Groundwater Resources installed twenty (20) groundwater monitoring wells in order to determine groundwater flow and origin of the contamination. The testing of wells located along the northern side of the Long Island Expressway (L.I.E) south service road (adjacent/north of the subject site) indicated low levels of contamination (<15 ppb) at 30 to 110 feet below the water table. Testing of wells located along Precision Drive (AKA Natcon Drive) which is immediately

downgradient/south of the subject site, indicated high levels of TCA contamination (3-9300 ppb) at 10 to 40 feet below the water table. The SCDHS estimated through additional monitoring wells that a plume of contamination approximately 300 feet wide by 3100 feet long is emanating from the area occupied by Precision Concepts.

Jan. - Feb. 1991 • The SCDHS issued an Order of Consent to Precision Concepts (IW-91-0001), charging violation of Article 7 and Article 12 of the Suffolk County Sanitary Code. The SCDHS sampled the site during May, 1988; May, 1990; June, 1990; and November, 1990, charging that the company had discharged hazardous material during these periods causing the contamination of soil, groundwater and private wells located downstream of the site.

July 1991 • The SCDHS sampled the two (2) storm drains (DW-1 and DW-2) located in the rear loading dock area, as well as sampling the on-site sanitary cesspool (C-1) located near the northwest corner of the subject building. The liquid samples were analyzed for VOCs and metals.

August 1991 • Correspondence from Mr. Dennis Gobbi of the SCDHS informed Precision Concepts that the analytical results for the sample collected from C-1 revealed that the state and county discharge standards had been exceeded. There were no exceedances noted in either of the samples from drywells DW-1 and DW-2.

March 1992 • The SCDHS filed a notice of Formal Hearing directing that Precision Concepts appear in connection with the violations listed as per the Consent Order - IW-92-006, and further requesting that Precision Concepts submit proposals for performing soil and groundwater sampling; the installation of groundwater monitoring wells; perform on-site chemical inventories, and several other items.

June 1992 • The pump out and disposal of the contents of an 8,000 gallon septic system (C-1) was approved by County of Suffolk Department of Public Works and immediately carried out.

Sept. 1992	•	A Soil and Groundwater Investigation Workplan (SGIW) was prepared for Precision Concepts by Mr. Richard D. Galli, P.E., P.C., Greenlawn, New York.
Jan. 1993	•	The SCDHS rejected (SGIW) prepared by Mr. Galli and later responded by asking for a full site assessment as per NYS DEC protocols for RI/FS, or the equivalency of a State Superfund Preliminary Site Assessment (PSA).
Aug. - July 1993	•	A facility and Tank Closure Plan for Precision Concepts was approved by the SCDHS and subsequently carried out by Life Support Sciences Inc., Greenlawn, New York, which included the cleaning and removal of one (1) 6,000 gallon AST and one (1) 500 gallon degreasing tank formerly containing 1,1,1 trichloroethylene.
Aug. - July 1993	•	The SCDHS was considering the nomination of the Precision Concepts site (subject site) to the New York State Superfund program.
Currently	•	At this time, the subject site is listed by the New York State Department of Environmental Conservation (NYSDEC) as a Inactive Hazardous Waste Disposal (IHWD) Site.

Based upon the site history and the fact that the site is listed a State Inactive Hazardous Waste Disposal Site (IHWD), as well as the presence of a National Priority List (NPL) site (Brookhaven National Laboratory) being located directly upgradient from the subject property, it was determined that a Phase II Subsurface Investigation be conducted at the subject site in order to determine the soil and groundwater quality in the vicinity of the subject property.

The investigation consisted of installing six (6) soil borings in strategic locations with respect to possible on-site and off-site contamination sources. Please note that the soil borings were conducted at the site on three (3) separate occasions: May 16, 1996, and January 24 and 31, 1997. In addition, soil samples were collected from drywells DW-1 and DW-2 on May 16, 1996, July 31, 1996 and January 24, 1997, soil samples were collected from drywells DW-3 and DW-4 on January 24, 1997 only. The soil borings were installed using a van-mounted Geo-Probe drilling rig. The soil borings were installed for the purpose of obtaining groundwater and soil

samples, in order to document the subsurface conditions at the site. Soil samples were collected at varying depths in each of the borings. Groundwater samples were collected from the soil/water interface level which was encountered at approximately forty-four (44) feet below land surface (bls). The four (4) drywells (DW-1 through DW-4) located in the rear of the site were sampled and submitted for laboratory analysis. The soil samples obtained from the drywells were collected using a decontaminated stainless steel hand-auger. In addition, a collection pit located in the interior of the warehouse area was remediated, at the request of the SCDHS. The location of the soil borings, drywells and collection pit are included on Figure 6.0 - Site Plan.

The collected soil samples from the soil borings and drywells were screened with an HNU photoionization detector (PID), which is capable of detecting volatile organic compounds (VOCs). In addition, the samples were visually examined in an attempt to identify any possible signs of contamination. A summary of the lithology encountered and the PID readings are summarized in Table 1.

A total of five (5) groundwater samples and five (5) soil samples were submitted for laboratory analysis. The groundwater samples obtained from soil borings SB-1, SB-2 and SB-4 were submitted for laboratory analysis of volatile organic compounds using EPA Method 624 as well as for the 8 RCRA Metals, with the exception of the groundwater sample from soil boring SB-2, which was submitted for analysis of the 8 RCRA Metals only. The groundwater samples collected from soil borings SB-5 and SB-6 were analyzed for VOCs and 13 heavy metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". The soil samples obtained from the drywells and the collection pit were analyzed for VOCs and 13 heavy metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools", with the exception of the sample obtained from drywell DW-1 on July 31, 1996, which was analyzed for the 13 Metals only. The findings of the subsurface investigation are summarized below.

TABLE 1

SOIL BORING LOGS

Soil Boring	Location	Depth (below grade)	Lithology
SB-1	Northwest corner of subject property, approximately ten (10) feet south of the LIE service road.	40-43 ft.	Tan, coarse to medium grain quartz sand with pebbles. No odor or staining noticed. PID = 2.0 ppm
SB-2	Northeast corner of subject property, approximately ten (10) feet south of the LIE service road.	NA	No soil sample collected from SB-2.
SB-3	South side of subject property, approximately 25 feet east of west entrance.	20-22 ft.	Medium to fine grain quartz rich sand, trace pebbles. No odor or staining noticed. PID = 1.5 ppm.
SB-3	South side of subject property, approximately 25 feet east of west entrance.	30-32 ft.	Medium to fine grain quartz rich sand, trace pebbles. No odor or staining noticed. PID = 2.0 ppm.
SB-3	South side of subject property, approximately 25 feet east of west entrance.	39-41 ft.	Medium to fine grain quartz rich sand, trace pebbles. No odor or staining.
SB-4	South side of subject property, approximately 10 feet east of east service entrance.	18-20 ft.	Rusty-tan fine grain quartz rich sand. No odor or staining. PID = 0.5 ppm.
SB-5	Approximately 5 feet south of drywell DW-3.	NA	No soil sample collected.
SB-6	Approximately 5 feet south of drywell DW-4.	20-22 ft.	Rusty-tan fine grain quartz sand. No odor or staining noticed. PID = 0.6 ppm.

3.1 Groundwater Characterization

A total of six (6) soil borings were conducted in strategic locations with respect to possible on-site and off-site contamination sources. Please note that the soil borings were conducted at the site on three (3) separate occasions: May 16, 1996, and January 24 and 31, 1997. The soil borings were installed for the purpose of obtaining groundwater samples for laboratory analysis. Groundwater samples were collected at the soil/water interface level which was encountered at approximately forty-four (44) feet bls. The groundwater samples collected from soil borings SB-1, SB-2, SB-4, SB-5 and SB-6 were submitted for laboratory analysis. The groundwater samples obtained from soil borings SB-1, SB-2 and SB-4 were submitted for laboratory analysis of volatile organic compounds using EPA Method 624 as well as for the 8 RCRA Metals, with the exception of the groundwater sample from soil boring SB-2 which was submitted for analysis of the 8 RCRA Metals only. The groundwater samples collected from soil borings SB-5 and SB-6 were analyzed for VOCs and 13 Metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". The analytical results for the groundwater samples were compared to the values set forth by the New York State Department of Environmental Conservation Water Quality Regulations.

The analytical results indicated that there were no detectable concentrations of volatile organic compounds (VOCs) present in any of the groundwater samples. The metals analysis revealed that there are elevated levels of metals present in both the upgradient (SB-1 and SB-2) and the downgradient (SB-4, SB-5 and SB-6) groundwater samples. Based upon a comparison of the analytical data, it was determined that there is a general decrease in the contaminant concentrations as moving downgradient (south) across the subject site. Although, the analytical results for the groundwater sample from soil boring SB-5 indicated an increase in contaminant concentration. It is believed that the groundwater analytical results for SB-5 are indicative of a "hot spot" in a contaminant plume migrating across the subject site, and are not related to a point source of contaminant discharge on the subject site. The laboratory analytical results for the groundwater samples are summarized below in Table 2, Table 3 and Table 4.

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS (VOCs)
EPA METHOD 624

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standards	SB-1	SB-4
Benzene	0.7	<5	<5
Bromodichloromethane	50	<5	<5
Bromoform	50	<5	<5
Bromomethane	5	<5	<5
Carbon Tetrachloride	5	<5	<5
Chlorobenzene	5	<5	<5
Chloroethane	5	<5	<5
2-Chloroethylvinyl Ether	7	<5	<5
Chloroform	5	<5	<5
Chloromethane	5	<5	<5
Dibromochloromethane	5	<5	<5
1,2-Dichlorobenzene	5	<5	<5
1,3-Dichlorobenzene	5	<5	<5
1,4-Dichlorobenzene	5	<5	<5
1,1-Dichloroethane	5	<5	<5
1,2-Dichloroethane	5	<5	<5
1,1-Dichloroethene	5	<5	<5
trans-1,2-Dichloroethene	5	<5	<5
1,2-Dichloropropane	5	<5	<5

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standards	SB-1	SB-4
cis-1,3-Dichloropropene	5	<5	<5
trans-1,2-Dichloropropene	5	<5	<5
Ethylbenzene	5	<5	<5
Methylene Chloride	5	<5	<5
1,1,1,2-Tetrachloroethane	5	<5	<5
Tetrachloroethene	5	<5	<5
Toluene	5	<5	<5
1,1,1-Trichloroethane	5	<5	<5
1,1,2-Trichloroethane	5	<5	<5
Trichloroethene	5	<5	<5
Trichlorofluoromethane	5	<5	<5
Vinyl Chloride	2	<5	<5
Xylenes (Total)	15	<15	<15

Notes: 1. All results in ug/L (ppb)

2. * = Results are published in the New York State Department of Conservation Water Quality Regulations.

TABLE 3

GROUNDWATER QUALITY
VOLATILE ORGANIC COMPOUNDS (VOCs)
SCDHS PROTOCOL

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standards	SB-5	SB-6
Benzene	0.5	<5	<5
Bromodichloromethane	NL	<5	<5
Bromoform	50	<5	<5
Bromomethane	5	<5	<5
Carbon Tetrachloride	5	<5	<5
Chlorobenzene	5	<5	<5
Chloroethane	50	<5	<5
2-Chloroethylvinylether	NL	<5	<5
Chloroform	7	<5	<5
Chloromethane	NL	<5	<5
Dibromochloromethane	50	<5	<5
1,2-Dichlorobenzene	5	<5	<5
1,3-Dichlorobenzene	5	<5	<5
1,4-Dichlorobenzene	5	<5	<5
1,1-Dichloroethane	5	<5	<5
1,2-Dichloroethane	5	<5	<5
trans-1,2-Dichloroethene	5	<5	<5
1,2-Dichloropropane	5	<5	<5
cis-1,3-Dichloropropene	NL	<5	<5
trans-1,3-Dichloropropene	5	<5	<5

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standards	SB-5	SB-6
Ethylbenzene	5	<5	<5
Methylene Chloride	NL	<5	<5
1,1,1,2-Tetrachloroethane	5	<5	<5
Tetrachloroethene	NL	<5	<5
Toluene	5	<5	<5
1,1,1-Trichloroethane	5	<5	<5
1,1,2-Trichloroethene	5	<5	<5
Trichloroethene	NL	<5	<5
Trichlorofluoromethane	5	<5	<5
Vinyl Chloride	2	<5	<5
Dichlorofluoromethane	NL	<5	<5
2,2-Dichloropropane	NL	<5	<5
cis-1,2-Dichloroethene	NL	<5	<5
Bromochloromethane	5	<5	<5
1,1-Dichloropropene	5	<5	<5
Dibromomethane	NL	<5	<5
Tetrachloroethylene	5	<5	<5
1,3-Dichloropropane	5	<5	<5
1,2-Dibromoethane	5	<5	<5
Styrene	NL	<5	<5
Isopropylbenzene	NL	<5	<5
Bromobenzene	5	<5	<5
1,1,2,2-Tetrachloroethane	5	<5	<5
1,2,3-Trichloropropane	5	<5	<5
n-Propylbenzene	5	<5	<5

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standards	SB-5	SB-6
2-Chlorotoluene	NL	<5	<5
4-Chlorotoluene	NL	<5	<5
1,3,5-Trimethylbenzene	NL	<5	<5
tert-Butylbenzene	5	<5	<5
1,2,4-Trimethylbenzene	NL	<5	<5
sec-Butylbenzene	5	<5	<5
P-Isopropyltoluene	NL	<5	<5
n-Butylbenzene	5	<5	<5
1,2-Dibromo-3-Chloropropane	NL	<5	<5
1,2,4-Trichlorobenzene	NL	<5	<5
Hexachlorobutadiene	NL	<5	<5
Naphthalene	50	<5	<5
1,2,3-Trichlorobenzene	NL	<5	<5
Freon 113	NL	<5	<5
p-Diethylbenzene	NL	<5	<5
p-Ethyltoluene	NL	<5	<5
1,2,4,5-Tetramethylbenzene	NL	<5	<5
Acetone	50	<5	<5
Chlorodifluoromethane	NL	<5	<5
Methyl Ethyl Ketone	35	<5	<5
Methyl Isobutyl Ketone	50	<5	<5
Xylene (Total)	5	<15	<15

Notes: 1. Results are in ug/L (ppb).

2. NL = No Value Listed by NYSDEC.

TABLE 4

GROUNDWATER QUALITY DATA
METALS ANALYSIS

ANALYTICAL PARAMETERS	*NYSDEC Groundwater Standard	SB-1	SB-2	SB-4	SB-5	SB-6
Arsenic	0.025	<0.05	<0.05	<0.05	<0.05	<0.05
Barium	1.00	1.03	2.65	<1.00	2.23	<1.00
Cadmium	0.005	<0.05	<0.05	<0.05	<0.05	<0.05
Chromium	0.05	3.67	13.0	10.20	16.2	5.37
Lead	0.025	0.30	0.82	0.27	2.55	0.24
Mercury	0.002	<0.020	<0.020	<0.020	<0.020	<0.020
Selenium	0.01	<0.05	<0.05	<0.05	1.15	0.41
Silver	0.05	NA	NA	NA	<0.05	<0.05
Copper	0.20	NA	NA	NA	8.79	1.35
Nickel	NL	NA	NA	NA	4.45	1.05
Iron	0.30	NA	NA	NA	3,592	669
Manganese	0.30	NA	NA	NA	26.2	9.99
Zinc	0.30	NA	NA	NA	9.71	1.31

Notes:
1. All results in mg/L (ppm)
2. * =Results are published in the New York State Department of Conservation Water Quality Regulations.
3. NA = Parameter not analyzed for.

3.2 Drywell Characterization

There are two (2) storm water drywells (DW-1 and DW-2) located in the rear (south) loading dock area, as well as two (2) buried drywells (DW-3 and DW-4) located near the loading dock area. A review of the records maintained by the Suffolk County Department of Health Services (SCDHS) indicated that the drywells (DW-1 and DW-2) were sampled on July 1, 1991 by the SCDHS. The analytical results indicated that there were no contaminants present at levels exceeding the state or county discharge levels. However, based upon the site history, as well as the presence of a "Y" connection on the interior roof drain, which discharges to drywells DW-3 and DW-4, it was determined that an investigation of the four (4) drywells be conducted.

Representative soil samples were collected from drywells DW-1 and DW-2 on May 17, 1996, July 31, 1996 (DW-1 only), and January 28, 1997. Soil samples were collected from drywells DW-3 and DW-4 on January 28, 1997. The samples were collected for the purpose of documenting the quality of the material contained within the drywells. A clean steel hand auger was used to collect the soil samples. The soil samples were field screened with a HNU photoionization detector (PID), which is capable of detecting volatile organic compounds (VOCs). The results of the PID screening indicated that there were no detectable levels of VOCs present. The samples were also visually inspected for possible signs of contamination. The soil samples obtained from DW-1 and DW-2 exhibited some discoloration.

All of the soil samples collected from the drywells were submitted for laboratory analysis. The soil sludge samples were stored on ice after being collected. The samples were then delivered to American Analytical Laboratories, a New York State certified laboratory located in Farmingdale, New York. The samples were analyzed for volatile organic compounds (VOCs) and also for the 13 metals as specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". Please note that the sample obtained from DW-1 on July 31, 1996, was submitted for analysis of the 13 metals only.

The analytical results for the soil samples obtained from the drywells were compared to the Action Levels listed in the Suffolk County Department of Health Services (SCDHS) "Article 12 - Standard Operating Procedure No. 9-95 - Pumpout and Soil Cleanup Criteria". The analytical results for drywells DW-1 and DW-2 indicated that there were no detectable levels of VOCs present in any of the samples collected during the three (3) sampling rounds. However, the

metals analysis for drywells DW-1 and DW-2 revealed conflicting results over the three (3) sampling rounds. The analytical results for the samples obtained on May 17, 1996, indicated that there were no metals detected at levels above their respective regulatory action levels, with the exception of copper, which was detected at a concentration of 1,529 ppm in the sample from DW-1. Therefore, on July 31, 1996, another soil sample was obtained from drywell DW-1 in order to confirm the previous laboratory analytical results. The sample was analyzed for the 13 metals only. The analytical results indicated that there were no metals present at concentrations greater than their respective regulatory limits and copper was detected at a concentration of only 15.4 ppm. On January 28, 1997, representative soil samples were collected from drywells DW-1 through DW-4. The analytical results for drywells DW-1 and DW-2 indicated that there were on detectable levels of VOCs present in the samples. The results for the metals analysis for DW-1 and DW-2 revealed that there were no metals detected at levels above their respective regulatory action levels, with the exception of copper, which was detected at 1,114 ppm, and chromes at 149 ppm in DW-2. The analytical results for drywells DW-3 and DW-4 indicated that there were on detectable levels of VOCs present in the samples. The results for the metals analysis for DW-3 and DW-4 revealed that there were no metals detected at levels above their respective regulatory action levels. Based upon the varied results for the metals analysis on drywells DW-1 and DW-2, it appears that there may have been a laboratory error which has lead to the ambiguity of the results. However, Please note that the review of laboratory analytical results for drywells and cesspools, as well as any determination of contamination is made by the Suffolk County Department of Health Services (SCDHS). The review and determination is made on a case by case basis. The results of the drywell analysis is summarized in Table 3 and Table 4.

TABLE 5

SOIL QUALITY DATA
SCDHS PROTOCOL

ANALYTICAL PARAMETERS	DW-1 5/17/96	DW-1 1/28/97	DW-2 5/17/96	DW-2 1/28/97	DW-3	DW-4
Benzene	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5
Bromomethane	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5
Chloroethane	<5	<5	<5	<5	<5	<5
2-Chloroethylvinylether	<5	<5	<5	<5	<5	<5
Chloroform	<5	<5	<5	<5	<5	<5
Chloromethane	<5	<5	<5	<5	<5	<5
Dibromochloromethane	<5	<5	<5	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5	<5	<5	<5
1,3-Dichlorobenzene	<5	<5	<5	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5
1,1-Dichloroethene	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5
cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5

ANALYTICAL PARAMETERS	DW-1 5/17/96	DW-1 1/28/97	DW-2 5/17/96	DW-2 1/28/97	DW-3	DW-4
Ethylbenzene	<5	<5	<5	<5	<5	<5
Methylene Chloride	<5	<5	<5	<5	<5	<5
1,1,1,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5
Tetrachloroethene	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethene	<5	<5	<5	<5	<5	<5
Trichloroethene	<5	<5	<5	<5	<5	<5
Trichlorofluoromethane	<5	<5	<5	<5	<5	<5
Vinyl Chloride	<5	<5	<5	<5	<5	<5
Dichlorofluoromethane	<5	<5	<5	<5	<5	<5
2,2-Dichloropropane	<5	<5	<5	<5	<5	<5
cis-1,2-Dichloroethene	<5	<5	<5	<5	<5	<5
Bromochloromethane	<5	<5	<5	<5	<5	<5
1,1-Dichloropropene	<5	<5	<5	<5	<5	<5
Dibromomethane	<5	<5	<5	<5	<5	<5
Tert-Butyl Methyl Ether (MTBE)	<5	<5	<5	<5	<5	<5
1,3-Dichloropropane	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5	<5	<5	<5
Styrene	<5	<5	<5	<5	<5	<5
Isopropylbenzene	<5	<5	<5	<5	<5	<5
Bromobenzene	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5	<5	<5	<5
n-Propylbenzene	<5	<5	<5	<5	<5	<5

ANALYTICAL PARAMETERS	DW-1 5/17/96	DW-1 1/28/97	DW-2 5/17/96	DW-2 1/28/97	DW-3	DW-4
2-Chlorotoluene	<5	<5	<5	<5	<5	<5
4-Chlorotoluene	<5	<5	<5	<5	<5	<5
1,3,5-Trimethylbenzene	<5	<5	<5	<5	<5	<5
tert-Butylbenzene	<5	<5	<5	<5	<5	<5
1,2,4-Trimethylbenzene	<5	<5	<5	<5	<5	<5
sec-Butylbenzene	<5	<5	<5	<5	<5	<5
P-Isopropyltoluene	<5	<5	<5	<5	<5	<5
n-Butylbenzene	<5	<5	<5	<5	<5	<5
1,2-Dibromo-3-Chloropropane	<5	<5	<5	<5	<5	<5
1,2,4-Trichlorobenzene	<5	<5	<5	<5	<5	<5
Hexachlorobutadiene	<5	<5	<5	<5	<5	<5
Naphthalene	<5	<5	<5	<5	<5	<5
1,2,3-Trichlorobenzene	<5	<5	<5	<5	<5	<5
Freon 113	<5	<5	<5	<5	<5	<5
p-Diethylbenzene	<5	<5	<5	<5	<5	<5
p-Ethyltoluene	<5	<5	<5	<5	<5	<5
1,2,4,5-Tetramethylbenzene	<5	<5	<5	<5	<5	<5
Acetone	<5	<5	<5	<5	<5	<5
Dichlorodifluoromethane	<5	<5	<5	<5	<5	<5
Methyl Ethyl Ketone	<5	<5	<5	<5	<5	<5
Methyl Isobutyl Ketone	<5	<5	<5	<5	<5	<5
Xylene (Total)	<15	<15	<15	<15	<15	<15

Notes: 1. Results are in ug/Kg (ppb).

TABLE 6

SOIL QUALITY DATA

13 RCRA METALS
SCDHS PROTOCOL

ANALYTICAL PARAMETERS	SCDHS Action Levels*	DW-1 5/17/96	DW-1 7/31/96	DW-1 1/28/97	DW-2 5/17/96	DW-2 1/28/97	DW-3 1/28/97	DW-4 1/28/97
Silver	100	<1.65	<1.65	<1.65	<1.65	14.9	<1.65	<1.65
Barium	NL	6.39	5.41	5.06	8.87	16.6	6.75	3.69
Cadmium	10	1.81	<1.65	<1.65	<1.65	<1.65	<1.65	<1.65
Copper	500	1,529	15.4	13.6	<1.65	1,114	7.75	2.14
Nickel	1,000	8.70	5.89	2.08	3.31	65.3	2.46	<1.65
Selenium	NL	<1.65	2.40	<1.65	<1.65	<1.65	<1.65	<1.65
Zinc	NL	4,378	29.6	1,664	4,373	7,085	3,380	1,767
Iron	NL	39.1	5,081	20.0	81.0	44.4	32.4	43.0
Manganese	NL	14.5	45.3	3.48	4.87	47.4	28.3	7.62
Lead	400	<0.020	3.95	<0.020	<0.020	<0.020	<0.020	<0.020
Mercury	2	<6.60	<0.020	<6.60	<6.60	<6.60	<6.60	<6.60
Arsenic	25	16.4	<6.60	1.83	3.41	18.4	3.74	2.82
Chromium	100	36.7	5.57	22.1	11.5	149	22.2	6.28

Notes: 1. All results are in mg/Kg (ppm).

2. * Values listed in the Suffolk County Department of Health Services (SCDHS) "Article 12 - Standard Operating Procedure No. 9-95 Pumpout and Soil Cleanup Criteria".

3. NL - No value listed by the SCDHS.

3.2 Collection Pit Remediation

There is a collection pit located along the east side of the subject building in the warehouse area. Please note that the collection pit was not observed during the performance of the original Phase I Environmental Site Assessment due to the fact that there were multiple pallets obscuring the view of the pit. The pit is constructed of concrete block and measures approximately six (6) feet long, three (3) feet wide and four (4) feet deep. The SCDHS collected a sample of the soil contained in the pit. The soil was analyzed for VOCs and the 13 metals as specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". The SCDHS indicated that there was elevated levels of metals present in the sample, and therefore it was decided that the collection pit would need to be remediated. On July 17, 1996, approximately two (2) yards of soil were removed from the collection pit. The soil was removed manually, as there was insufficient room available to utilize a backhoe or other heavy equipment in the area. Upon removal of the contaminated soil an end-point sample was collected and submitted for laboratory analysis as per the requirements of the SCDHS. The analytical results indicated that there were no detectable VOCs present in the sample. The metals analysis indicated that there low levels of metals present, all at concentrations significantly lower than their respective regulatory limits. Upon approval from the SCDHS indicating that there would be no further work required, the pit was backfilled with clean sand and completed at grade with concrete, thereby eliminating the possibility for future discharges into the collection pit. The analytical results for the end-point sample are summarized in Table 7 and Table 8.

TABLE 7

SOIL QUALITY DATA
COLLECTION PIT
SCDHS PROTOCOL

ANALYTICAL PARAMETERS	COLLECTION PIT
Benzene	<5
Bromodichloromethane	<5
Bromoform	<5
Bromomethane	<5
Carbon Tetrachloride	<5
Chlorobenzene	<5
Chloroethane	<5
2-Chloroethylvinylether	<5
Chloroform	<5
Chloromethane	<5
Dibromochloromethane	<5
1,2-Dichlorobenzene	<5
1,3-Dichlorobenzene	<5
1,4-Dichlorobenzene	<5
1,1-Dichloroethane	<5
1,2-Dichloroethane	<5
1,1-Dichloroethene	<5
trans-1,2-Dichloroethene	<5
1,2-Dichloropropane	<5
cis-1,3-Dichloropropene	<5
trans-1,3-Dichloropropene	<5

ANALYTICAL PARAMETERS	COLLECTION PIT
Ethylbenzene	<5
Methylene Chloride	<5
1,1,1,2-Tetrachloroethane	<5
Tetrachloroethene	<5
Toluene	<5
1,1,1-Trichloroethane	<5
1,1,2-Trichloroethene	<5
Trichloroethene	<5
Trichlorofluoromethane	<5
Vinyl Chloride	<5
Dichlorofluoromethane	<5
2,2-Dichloropropane	<5
cis-1,2-Dichloroethene	<5
Bromochloromethane	<5
1,1-Dichloropropene	<5
Dibromomethane	<5
Tert-Butyl Methyl Ether (MTBE)	<5
1,3-Dichloropropane	<5
1,2-Dibromoethane	<5
Styrene	<5
Isopropylbenzene	<5
Bromobenzene	<5
1,1,2,2-Tetrachloroethane	<5
1,2,3-Trichloropropane	<5
n-Propylbenzene	<5

ANALYTICAL PARAMETERS	COLLECTION PIT
2-Chlorotoluene	<5
4-Chlorotoluene	<5
1,3,5-Trimethylbenzene	<5
tert-Butylbenzene	<5
1,2,4-Trimethylbenzene	<5
sec-Butylbenzene	<5
P-Isopropyltoluene	<5
n-Butylbenzene	<5
1,2-Dibromo-3-Chloropropane	<5
1,2,4-Trichlorobenzene	<5
Hexachlorobutadiene	<5
Naphthalene	<5
1,2,3-Trichlorobenzene	<5
Freon 113	<5
p-Diethylbenzene	<5
p-Ethyltoluene	<5
1,2,4,5-Tetramethylbenzene	<5
Acetone	<5
Dichlorodifluoromethane	<5
Methyl Ethyl Ketone	<5
Methyl Isobutyl Ketone	<5
Xylene (Total)	<15

Notes: 1. Results are in ug/Kg (ppb).

TABLE 8

SOIL QUALITY DATA
COLLECTION PIT

13 METALS
SCDHS PROTOCOL

ANALYTICAL PARAMETERS	SCDHS Action Levels*	COLLECTION PIT
Silver	100	<1.65
Barium	NL	7.83
Cadmium	10	<1.65
Copper	500	5.91
Nickel	1,000	2.60
Selenium	NL	<1.65
Zinc	NL	1,471
Iron	NL	6.26
Manganese	NL	18.6
Lead	400	<0.020
Mercury	2	<6.60
Arsenic	25	42.5
Chromium	100	1.97

Notes: 1. All results are in mg/Kg (ppm).

2. * Values listed in the Suffolk County Department of Health Services (SCDHS) "Article 12 - Standard Operating Procedure No. 9-95 Pumpout and Soil Cleanup Criteria".

3. NL - No value listed by the SCDHS.

4.0 REVIEW OF FEDERAL, STATE AND LOCAL REGULATORY AGENCY RECORDS & DOCUMENTS

To determine if the subject site is listed, known, or suspected of being a hazardous waste site, federal and state listings/documents were reviewed. The NYS DEC Spill logs were reviewed to determine if any documented discharge of hazardous materials has occurred within or near the subject site. The NYS DEC Inactive Hazardous Waste Disposal Sites (IHWD) inventory of all actual or suspected inactive hazardous waste sites was reviewed. The State lists were reviewed for landfills and/or solid waste disposal sites, leaking UST sites, and registered UST sites. The US EPA databases were reviewed for National Priority List (NPL) sites, Comprehensive Environmental Response Compensation Liability Information System (CERCLIS) listed sites, RCRIS-TSD sites, RCRIS generators list sites, ERNS listed sites. The Suffolk County Department of Health Services (SCDHS), and the Town of Brookhaven files were reviewed for any records which may have been maintained by these agencies concerning the subject site.

United States Environmental Protection Agency (US EPA)

General Consolidated Industries, Inc. through the Freedom of Information Act, reviewed the records of the U.S. Environmental Protection Agency (US EPA) as supplied by that agency for the purpose of identifying sites and facilities located within a given radii of the subject property where there has been known hazardous waste activity.

The specific US EPA databases and reports reviewed include the following:

* US EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) National Priority List (NPL)
  Search Distance (miles) 1.0

* US EPA Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)
  Search Distance (miles) 0.5

* US EPA Resource Conservation and Recovery Information System (RCRIS-TSD)
  Search Distance (miles) 1.0

* US EPA Resource Conservation and Recovery Information System (RCRIS) Small Quantity Generator
Search Distance (miles) 0.25

* US EPA Resource Conservation and Recovery Information System (RCRIS) Large Quantity Generator
Search Distance (miles) 0.25

* US EPA RCRA Administrative Action Tracking System (RAATS)
Search Distance (miles) . . . . . Target Property

* US EPA PCB Activity Database System (PADS)
Search Distance (miles) . . . . . Target Property

* US EPA Emergency Response Notification System (ERNS)
Search Distance (miles) . . . . . Target Property

* US EPA Facility Index System (FINDS)
Search Distance (miles) . . . . . Target Property

* US EPA Toxic Chemical Release Inventory System (TRIS)
Search Distance (miles) . . . . . Target Property

* US EPA Federal Superfund Liens (NPL Liens)
Search Distance (miles) . . . . . Target Property

* US EPA Toxic Substance Control Act (TSCA)
Search Distance (miles) . . . . . Target Property

New York State Department of Environmental Conservation (NYS DEC)

General Consolidated Industries Inc. through the Freedom of Information Act reviewed the records of the New York State Department of Environmental Conservation (NYS DEC) as supplied by that agency for the purpose of identifying sites and facilities located within a given radii of the subject property where there has been known hazardous waste activity.

The specific NYS DEC databases and reports reviewed include the following:

* NYS DEC State Hazardous Waste Sites
  Search Distance (miles) 1.0

* NYS DEC Solid Waste Facilities/Landfill Sites
  Search Distance (miles) 0.5

* NYS DEC Leaking Underground Storage Tanks (LUST)
  Search Distance (miles) 0.5

* NYS DEC Registered Underground Storage Tanks (UST)
  Search Distance (miles) 0.25

* NYS DEC Hazardous Materials Information Reporting System (HMIRS)
  Search Distance (miles) . . . . . Target Property

4.1 United States Environmental Protection Agency (US EPA) Listed Sites

National Priority List (NPL)

The United States Environmental Protection Agency (US EPA) maintains a database of unmanaged (uncontrolled) and/or forsaken (abandoned) hazardous waste sites. The database is known as the National Priority List (NPL). Sites included in this list are given priority by the US EPA for remedial action under the federal Superfund Program. A particular site will be included on the NPL if it equals or exceeds an established hazard classification system score, or if it is designated as a particular state's top environmental priority site.

A site is also classified as an NPL site if all of the following criteria are satisfied:

1) The U.S. Department of Health & Human Services issues a health advisory recommending that people be evacuated from the site to avoid exposure.

2) The EPA determines that the site is a potentially significant environmental hazard.

3) The EPA determines that site remediation is more cost-effective than removal.

GCI reviewed the United States Environmental Protection Agency's National Priorities List. This review indicated that the subject site is not on the NPL list and that there is one (1) NPL site within a one (1.0) mile radius of the subject property:

(1) **Site:** Brookhaven National Laboratory (US Department of Energy)
Address: 53 Bell Avenue, Upton, New York 11973
EPA ID NO.: NY7890008975
Location: <1/8 mile north (upgradient)
Status: The site is a 5,265 acre, federally owned research facility operated by the Department of Energy, consisting of an active lab and waste disposal facility, with inactive and active landfills, "chemical holes", a sewage treatment plant and a former ash fill. Accidents have occurred in several areas. Strontium-90 radioactive slurry was accidentally injected into the groundwater in 1960. Other radioactive releases have occurred, some of which are federally permitted. Workers deposited over three tons of waste each day

into the former landfill which closed in 1966. The current landfill has been in operation since 1967. At the hazardous waste management facility (HWMF), spills of VOCs and other compounds have contaminated groundwater. In 1990, BNL discovered that traces of 1,1,1-Trichloroethane (TCA) and Dichloroethene (DCA) were detected in a test well along their southern property line.

CERCLIS

The US EPA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 was designed to allow the federal government to directly address any potential release of hazardous waste that may endanger public health or welfare; in order to "provide for liability, compensation, clean-up, and emergency response for hazardous substances released into the environment and clean-up of inactive hazardous waste disposal sites."

GCI has reviewed the USEPA Comprehensive Environmental Response Compensation Liability Information System (CERCLIS) database listing. The review has indicated that there is one (1) CERCLIS hazardous waste site located within a one-half (1/2) mile radius of the subject property:

(1)	**Site:**	Brookhaven National Laboratory (US Department of Energy)
	Address:	53 Bell Avenue, Upton, New York 11973
	EPA ID NO.:	NY7890008975
	Location:	<1/8 mile north (upgradient)
	Status:	See NPL listing.

RCRIS-TSD

The US EPA maintains a database of facilities on which treatment, storage, and/or disposal of hazardous wastes takes place, as defined and regulated by RCRA. The database is known as the RCRIS-TSD facilities list. A review of the latest database published indicated that there is one (1) RCRIS-TSD facility located within a one (1.0) mile radius of the subject site:

(1)	**Site:**	Brookhaven National Laboratory (US Department of Energy)
	Address:	53 Bell Avenue, Upton, New York 11973
	EPA ID NO.:	NY7890008975
	Location:	<1/8 mile north (upgradient)
	Status:	See NPL listing.

RCRIS Generators

The US EPA maintains a database of those persons or entities that generate hazardous wastes as defined and regulated by RCRA. The database is known as the RCRIS generators list. A review of the latest database published indicated that Precision Concepts Inc. was listed as a RCRIS Small Quantity Generator of hazardous waste noted as follows:

1)	**Site:**	Precision Concepts Inc.
	Address:	26 Precision Drive, Shirley, New York 11967
	EPA ID No.:	NYD982187270
	Description:	The operations conducted at the site entailed the generation of spent halogenated solvents and ignitable hazardous wastes.

Please note that Precision Concepts ceased operations at the subject site approximately in 1991. The records further indicated that there are three (3) RCRIS Generators located within a one-quarter (1/4) mile radius of the subject site.

CORRACTS

The US EPA maintains a database of facilities at which handlers are identified with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity. A review of the latest database published indicated that there is one (1) Corracts facility located within a one (1.0) mile radius of the subject site:

(1)	**Site:**	Brookhaven National Laboratory (US Department of Energy)
	Address:	53 Bell Avenue, Upton, New York 11973
	EPA ID NO.:	NY7890008975
	Location:	<1/8 mile north (upgradient)
	Status:	See NPL listing.

ERNS

The US EPA maintains an Emergency Response Notification System list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. The list is known as the ERNS list. A review of the latest list published indicated that no ERNS activity was reported at the subject property.

4.2 New York State Department of Environmental Conservation (NYS DEC) Listed Sites

Inactive Hazardous Waste Sites

The New York State Department of Environmental Conservation (NYS DEC) publishes a report entitled "Inactive Hazardous Waste Disposal Sites in New York State", April 1995, which lists all properties that have been found to contain, or are suspected of containing, significant amounts of hazardous or toxic contamination.

A review of inactive hazardous waste disposal (IHWD) sites revealed that the subject site is listed by the NYS DEC as a known hazardous waste disposal site. The records further indicated that there are no (0) hazardous waste sites located within a one (1.0) mile radius of the subject property:

1) **Site:** Precision Concepts Inc.
Address: 26 Precision Drive, Shirley, New York 11967
EPA ID No.: Not Reported
Location: Subject Property

Description: Precision Concepts was a manufacturer of metal fixtures for use by the electronics industry. Precision Concepts operated its business from 1985 to 1989. There is record that there has been processing and storage of hazardous materials by Precision Concepts. The Suffolk County Department of Health Services (SCDHS) conducted extensive private water well sampling and groundwater sampling in the vicinity of the subject property, as well as sampling potential on-site contamination sources. The results of the SCDHS investigation revealed that there is contamination present in residential groundwater wells located downgradient of the subject property. The SCDHS indicated that the contamination source is believed to be emanating from the subject site. Based upon the SCDHS results it was determined that further investigation was necessary, please see Section 3.0 - Site Inspection / Subsurface Investigation.

Landfills and/or Solid Waste Disposal Sites

A review of New York State listed landfills and/or solid waste disposal sites revealed that there are no (0) solid waste disposal sites located within a one-half (1/2) mile radius of the subject site.

Registered Underground Storage Tanks (UST)

A review of the New York State list of registered underground storage tanks indicated that there are no registered USTs located a the subject site.

Registered Aboveground Storage Tanks (AST)

A review of the New York State list of registered aboveground storage tanks indicated that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91
Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91
Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91. There were no additional records regarding ASTs on file with the NYSDEC for the subject site.

Leaking Underground Storage Tanks (LUST)

The NYS DEC has compiled a record of all documented hazardous materials spills and illegal discharges to the land, subsurface, and surface water that have occurred within New York State since 1986. This record, commonly referred to as the "DEC Spill Logs" is a record of spills or releases of petroleum products such as gasoline and fuel oils from above and below ground storage tanks, however, it also includes any documented illegal dumping of any type of hazardous material.

A review of the New York State Department of Environmental Conservation (NYSDEC) records indicated that the subject property is not listed as a LUST site. In addition, the NYSDEC records also stated that there were two (2) LUST sites located within a one-half (1/2) mile radius of the subject property. Of these sites, none (0) are currently considered active. Based upon the fact that there are no (0) active sites, the potential for contamination from these sites to impact the subject property is unlikely.

New York Spills

Please note that in order to provide additional information regarding the subject site, GCI researches several additional federal databases. It was reported that the subject site is listed by the NYSDEC in the NY Spills database. The NY Spills is a listing of data collected on spills reported to the NYSDEC. The spill information regarding the subject site is listed as follows:

1)	**Site:**	Precision Concepts Incorporated
	Address:	26 Precision Drive Shirley, New York 11967
	Spill No.:	9109772
	Spill Date:	December 12, 1991
	Closed Date:	July 7, 1992
	Material Spilled:	Petroleum
	Quantity:	Five (5) gallons
	Resource Affected:	On land
	Status:	No significant threat to human health or collateral value of the property. The spill has been cleaned-up to the satisfaction of the NYSDEC.

Federal & State Regulatory Review Conclusion:

Based on the review of the regulatory agency databases mentioned above, as well as a review of the surrounding properties, it is anticipated that there is contamination migrating onto the subject property via an off-site source. Please note that the subject property is currently listed as a IHWD site by the NYSDEC. However, based upon the findings of the Phase II Subsurface Investigation conducted at the site, it appears that the subject property is not responsible for causing the regional groundwater contamination plume in the vicinity of the subject property. Therefore it has been wrongly listed as an IHWD site, and should be removed from the NYSDEC IHWD site list. The findings of the Phase II Subsurface Investigation indicate that the former operations conducted at the facility have not caused contamination of the groundwater, but rather the subject site is being contaminated via contaminated groundwater migrating across the subject property from an off-site upgradient source. The database searches of the Federal and State lists noted in the above sections revealed one (1) potential concern, specifically the one (1) NPL site; Brookhaven National Laboratory (BNL). The BNL site is located less than one-eighth (1/8) of a mile north (upgradient) of the subject site. Based upon the fact that there is documented contamination of the soil and groundwater at the BNL site, as well as the findings of the Phase II Subsurface Investigation, it would appear that contaminated groundwater from the BNL site is migrating across the subject property.

4.3 Suffolk County Department of Health Services (SCDHS)

The Suffolk County Department of Health Services (SCDHS) was contacted concerning any records retained by the agency concerning the subject site. A very large file presently exists regarding the subject site. A small portion of the documents pertain to the company presently occupying the subject site, known as "Luitpold Pharmaceutical, Inc." The remaining documents pertained to "Precision Concepts", the company which occupied the subject site prior to Luitpold Pharmaceutical, Inc. The prior business operations conducted at the subject site by Precision Concepts has been linked to on-site contamination of leaching pools and the sanitary system. The following is a partial chronological listing of the major chain of events as recorded by the SCDHS:

May 1988 • The SCDHS sampled a leaching pool located on the east side of the subject building, occupied at the time by Precision Concepts. The SCDHS found contamination of 1,200 ppb of 1,1,1 Trichloroethane (TCA). Please note that the current action level for TCA listed by the Suffolk County Department if Health Services (SCDHS) is 1,600 ppb.

March 1990 • Brookhaven National Laboratory (BNL) which is located north of the subject site, and north of the Long Island Expressway informed the SCDHS that traces of 1,1,1 Trichloroethane (TCA) and Dichloroethene (DCA) were detected in a test well along their southern property line.

May 1990 • The SCDHS sampled the industrial leaching pool located on the east side of the subject building, occupied at the time by Precision Concepts. The SCDHS found no organic contamination at a detection limit of 40 ppb.

June 1990 • The SCDHS Public Health Laboratory subsequently performed a sampling survey of approximately ninety (90) homes located south of the expressway and south of the subject site (occupied by Precision Concepts), where private drinking water wells were sampled for trace organics. Of the ninety (90) private wells tested, five (5) wells were found to be contaminated with TCA and DCA.

May - Oct. 1990 • The SCDHS Bureau of Groundwater Resources installed twenty (20) groundwater monitoring wells in order to determine groundwater flow and origin of the contamination. The testing of wells located along the northern side of the Long Island Expressway (L.I.E) south service road (adjacent/north of the subject site) indicated low levels of contamination (<15 ppb) at 30 to 110 feet below the water table. Testing of wells located along Precision Drive (AKA Natcon Drive) which is immediately downgradient/south of the subject site, indicated high levels of TCA contamination (3-9300 ppb) at 10 to 40 feet below the water table. The SCDHS estimated through additional monitoring wells that a plume of contamination approximately 300 feet wide by 3100 feet long is emanating from the area occupied by Precision Concepts.

Jan. - Feb. • The SCDHS issued an Order of Consent to Precision Concepts (IW-91-0001), charging violation of Article 7 and Article 12 of the Suffolk County Sanitary Code. The SCDHS sampled the site during May, 1988; May, 1990; June, 1990; and November, 1990, charging that the company had discharged hazardous material during these periods causing the contamination of soil, groundwater and private wells located downstream of the site.

July 1991 • The SCDHS sampled the two (2) storm drains (DW-1 and DW-2) located in the rear loading dock area, as well as sampling the on-site sanitary cesspool (C-1) located near the northwest corner of the subject building. The liquid samples were analyzed for VOCs and metals.

August 1991 • Correspondence from Mr. Dennis Gobbi of the SCDHS informed Precision Concepts that the analytical results for the sample collected from C-1 revealed that the state and county discharge standards had been exceeded. There were no exceedances noted in either of the samples from drywells DW-1 and DW-2.

March 1992	•	The SCDHS filed a notice of Formal Hearing directing that Precision Concepts appear in connection with the violations listed as per the Consent Order - IW-92-006, and further requesting that Precision Concepts submit proposals for performing soil and groundwater sampling; the installation of groundwater monitoring wells; perform on-site chemical inventories, and several other items.
June 1992	•	The pump out and disposal of the contents of an 8,000 gallon septic system (C-1) was approved by County of Suffolk Department of Public Works and immediately carried out.
Sept. 1992	•	A Soil and Groundwater Investigation Workplan (SGIW) was prepared for Precision Concepts by Mr. Richard D. Galli, P.E., P.C., Greenlawn, New York.
Jan. 1993	•	The SCDHS rejected (SGIW) prepared by Mr. Galli and later responded by asking for a full site assessment as per NYS DEC protocols for RI/FS, or the equivalency of a State Superfund Preliminary Site Assessment (PSA).
Aug. - July 1993	•	A facility and Tank Closure Plan for Precision Concepts was approved by the SCDHS and subsequently carried out by Life Support Sciences Inc., Greenlawn, New York, which included the cleaning and removal of one (1) 6,000 gallon AST and one (1) 500 gallon degreasing tank formerly containing 1,1,1 trichloroethylene.
Aug. - July 1993	•	The SCDHS was considering the nomination of the Precision Concepts site (subject site) to the New York State Superfund program.
Currently	•	At this time, the subject site is listed by the New York State Department of Environmental Conservation (NYSDEC) as a State Hazardous Waste Site (SHWS).

A copy of the record search request filed with the Suffolk County Department of Health Services (SCDHS) is enclosed in Appendix B - Historical Agency Records.

4.4 Town of Brookhaven

Research was conducted in the Town of Brookhaven to trace the history of all past applications to the Town for modification of the subject property, as well as to acquire all certificates of occupancy (C/O).

Building Department

The Town of Brookhaven Building Department records indicate that the property has been occupied for industrial and warehouse use since originally constructed prior to 1985. There is also records indicating that the building was utilized for metal stamping, soldering/assembling and cleaning by the company formerly occupying the subject site, known as Precision Concepts. Precision Concepts operated its business from 1985 to 1993.

Tax Assessor

The Town of Brookhaven Tax Assessor's Office indicated that the subject site was vacant undeveloped land prior to 1985.

Fire Prevention

The Town of Brookhaven Fire Prevention Division records indicate that the site had previously stored waste oil, degreasing solvent, waste acid and trichloroethane, as well as other hazardous chemicals.

Zoning / Land Use Records

The Town of Brookhaven Zoning Office records indicate that the subject site is zoned for commercial / industrial uses.

A copy of the documents obtained from the Town of Brookhaven is included in Appendix B - Historical Agency Records.

5.0 SUMMARY OF FINDINGS

5.1 Conclusions & Recommendations

Conclusions:

The preceding sections provide a full evaluation of the environmental threat to private and public health. Based on the completion of the up-dated Phase I Environmental Site Assessment, General Consolidated Industries, Inc. has come to the following conclusions:

The subject site is located at 26 Precision Drive (AKA Natcon Drive), 1,343 feet east of William Floyd Parkway, abutting Roned Road on the east side, south of the Long Island Expressway South Service Road, Town of Brookhaven, Suffolk County, Long Island, New York.

The parcel is an irregular rectangular shaped parcel, with approximately 1,355 feet of frontage along the south side. The property is approximately 900 feet deep. The total subject parcel is approximately 636,000 square feet or 15.9 acres. The building itself occupies approximately 6% of the subject site. The remainder of the property is developed as perimeter buffer and parking areas for the facility.

The subject site is a single lot parcel, improved by a commercial warehouse/office building, which is currently occupied by "Luitpold Pharmaceutical". The subject property was originally developed for use as a commercial/industrial facility with on site parking areas.

The subject building is constructed of concrete block with brick veneer. The building rests on a poured concrete slab foundation. Windows are comprised primarily of bronze plate glass in aluminum frames.

The building space consists of office areas along the north end, reception/waiting area, conference room, lunch room, storage rooms, a research and development lab, office areas, bathrooms (office and warehouse), loading area and three warehouse/storage areas along the south end.

The office section and primary entrance to the building is accessible from the north and west sides. Four (4) overhead bay doors access the warehouse/storage areas from the south side. All office areas are finished with carpeted floors, sheetrock walls and suspended acoustic ceilings. All manufacturing/storage areas remain unfinished with poured concrete floors, concrete walls and steel corrugated ceilings/roof deck.

The heat for the site is provided to the warehouse areas of the building via gas and electric fired, ceiling mounted forced hot air systems. All other areas including offices and research and development areas are heated via a gas fired, WEIL McLAIN boiler/circulating hot water baseboard system.

The primary roof of the building was observed to be a flat/terraced type. Storm water runoff at the building is directed to internal drains that reportedly are piped to the on-site drywells.

The electric and gas service for the entire subject site is supplied by Long Island Lighting Company (LILCO). The drinking (potable) water is supplied by the Suffolk County Water Authority (SCWA). All sanitary discharges are directed to the on-site sanitary cesspool system.

The potential for vandalism type dumping of hazardous material on the property is considered moderate to high. The property is very secluded and situated on a very low traffic, secondary thoroughfare, which is poorly lighted. Access is provided to the property from Precision Drive (AKA Natcon Drive) via two (2) driveways. There are no gates or fencing existing at the driveway areas. The north side is bound by the LIE south service road.

Sewage generated on site is reportedly directed to the on-site cesspool/septic tank.

Storm water at the parking areas is directed to several leaching pools including: two (2) leaching drywells located in the common parking area at the west side of the subject site, two (2) in the common parking area at the south side of the subject site, one (1) at the north end of the common parking area, and two (2) leaching drywells (DW-1 and DW-2) are located in the loading area along the south side of the subject site. In addition it was determined that there are two (2) buried drywells (DW-3 and DW-4) located west of the loading dock area which are utilized for collection of storm water from the roof.

There were no floor drains, slop sinks or other forms of subsurface discharge observed within the building at the time of the inspection, with the exception of the collection pit.

Activities conducted at the subject site do entail the use and storage of drums. There is one (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development lab. According to documents provided, this drum contains waste corrosive liquid, Nos (D002), consisting of hydrochloric and sulfuric acids.

The property has been occupied for industrial and warehouse use since originally constructed prior to 1985. There is no record that the building had ever been utilized for laboratory or x-ray processing, although metal stamping, soldering/assembling and cleaning were used by the company formerly occupying the subject site, known as Precision Concepts. Precision Concepts was a manufacturer of metal fixtures for use by the electronics industry. Precision Concepts operated its business from 1985 to 1993. There is record that there has been processing and storage of hazardous materials by Precision Concepts; although the normal operations, when conducted properly at the facility by the present uses carried out by Luitpold Pharmaceutical, Inc. would not appear to pose a threat to human health or the collateral value of the property.

During the site inspection, GCI personnel did not identify any evidence of chemical spills such as soil staining or stressed vegetation, with the exception of minor staining of the pavement in the vicinity of the loading dock area. The stains are most likely the result of automotive fluid leaks from trucks and other vehicles frequently idling in this area.

A review of the New York State Department of Environmental Conservation (NYSDEC) records indicated that a release of petroleum occurred at the subject site on December 12, 1991. The records stated that approximately five (5) gallons of petroleum product had been spilled on land as a result of poor housekeeping practices. The NYSDEC was notified and Spill No. 9109772 was assigned to the site. The spill was cleaned-up at the site, and the NYSDEC was satisfied with the remedial efforts and closed the spill file on July 7, 1992. There is no further work required at this time.

There is use and storage of chemicals at the subject site. There is one (1) - 55 gallon drum of hazardous waste chemicals is stored in the research and development lab. According to documents provided, this drum contains waste corrosive liquid, Nos (D002), consisting of hydrochloric and sulfuric acids. This drum is stored in a designated hazardous waste storage cabinet, with good housekeeping practices observed. It was reported that Chemical Pollution Control, a licensed hazardous waste transporter, is responsible for picking up and disposing of all chemical wastes at the subject site.

During the site inspection, GCI personnel did not identify any on-site underground storage tanks (USTs), aboveground storage tanks (ASTs) or any other storage tanks, nor any evidence of storage tanks such as fill ports, vent lines, manways or dispensers.

The New York State Department of Environmental Conservation (NYS DEC) Petroleum Bulk Storage (PBS) database was reviewed for any records of registered storage tanks at the subject site. The NYS DEC PBS database records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91
Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91
Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91.

The Suffolk County Department of Health Services was contacted concerning any records retained by the agency with regard to storage tanks at the subject site. The Suffolk County Department of Health Services records indicate that two (2) storage tanks and one (1) drum storage area were removed from the site on January 1, 1991. The specific information for the tanks and drum area is as follows:

Tank 1 - 6,000 GAL aboveground, outdoor, industrial waste - Removed 1/1/91
Tank 2 - 400 GAL aboveground, outdoor, organic solvent - Removed 1/1/91
Tank 3 - 1,875 GAL aboveground, indoor, drum storage area - Removed 1/1/91

The Town of Brookhaven was contacted concerning any records retained by the agency with regard to storage tanks at the subject site. The Town of Brookhaven records indicated that the site had previously stored waste oil, degreasing solvent, waste acid and trichloroethane, as well as other hazardous chemicals.

There was no suspect asbestos containing material (ACM) observed in any of the areas inspected during the site visit.

At the time of the inspection, there was one (1) ground based transformer located on-site, specifically at the northwest corner of the subject building. There was no evidence of staining due to leaking material in the vicinity of the transformer. In addition, it was reported by LILCO that there is no use of PCB oil in their transformers.

Radon is not considered a significant environmental concern within the subject site. In addition the subject site is not residential in nature, nor are there living spaces located below grade.

The subject site is improved by a commercial building. Being that the subject property was not residential in nature, the potential for lead-based paint (LBP) was not required to be scrutinized. Therefore, an on-site testing of painted surfaces for the presence of lead-based paint (LBP) was not performed.

Based on the review of the regulatory agency databases mentioned above, as well as a review of the surrounding properties, it is anticipated that contamination is migrating onto the subject property via an off-site source. Please note that the subject property is currently listed as a IHWD site by the NYSDEC. However, based upon the findings of the Phase II Subsurface Investigation conducted at the site, it appears that the subject property is not responsible for causing the regional groundwater contamination plume in the vicinity of the subject property. Therefore it has been wrongly listed as an IHWD site, and should be removed from the NYSDEC IHWD site list. The findings of the Phase II Subsurface Investigation indicate that the former operations conducted at the facility have not caused contamination of the groundwater, but rather the subject site is being contaminated via contaminated groundwater migrating across the subject property from an off-site upgradient source. The database searches of the Federal and State lists noted in the above sections revealed one (1) potential concern, specifically the one (1) NPL site; Brookhaven National Laboratory (BNL). The BNL site is located less than one-eighth (1/8) of a mile north (upgradient) of the subject site. Based upon the fact that there is documented contamination of the soil and groundwater at the BNL site, as well as the findings of the Phase II Subsurface Investigation, it would appear that contaminated groundwater from the BNL site is migrating across the subject property.

The building as well as the property are both in good condition. The normal operations presently conducted at the facility by the present use, would not pose a threat to human health or the collateral value of the property, assuming proper industry standards are being adhered to.

The preceding section provides a full evaluation of the environmental threat to private and public health. Based upon the completion of the Targeted Phase II Subsurface Investigation of the subject site, General Consolidated Industries, Inc. (GCI) has come to the following conclusions:

The subject property has a history of hazardous chemical usage, as well as a history of environmental problems. The SCDHS has documented contamination at the subject site in a leaching pool, the septic tank as well as a drywell.

The investigation consisted of installing six (6) soil borings in strategic locations with respect to possible on-site and off-site contamination sources. Please note that the soil borings were conducted at the site on three (3) separate occasions: May 16, 1996, and January 24 and 31, 1997. In addition, soil samples were collected from drywells DW-1 and DW-2 on May 16, 1996, July 31, 1996 and January 24, 1997, soil samples were collected from drywells DW-3 and DW-4 on January 24, 1997 only.

Soil samples were collected at varying depths in each of the borings. Groundwater samples were collected from the soil/water interface level which was encountered at approximately forty-four (44) feet below land surface (bls).

The four (4) drywells (DW-1 through DW-4) located in the rear of the site were sampled and submitted for laboratory analysis. The soil samples obtained from the drywells were collected using a decontaminated stainless steel hand-auger.

A collection pit located in the interior of the warehouse area was remediated at the request of the SCDHS. Approximately two (2) yards of soil were removed from the collection pit. An end-point sample was collected and submitted for laboratory analysis as per the SCDHS protocol. Based upon the analytical results it was reported by the SCDHS that there would be no need for further remediation of the collection pit. The pit was filled with clean sand and finished at grade with concrete.

A total of five (5) groundwater samples and five (5) soil samples were submitted for laboratory analysis. The groundwater samples obtained from soil borings SB-1, SB-2 and SB-4 were submitted for laboratory analysis of volatile organic compounds using EPA Method 624 as well as for the 8 RCRA Metals, with the exception of the groundwater sample from soil boring SB-2, which was submitted for analysis of the 8 RCRA Metals only. The groundwater samples collected from soil borings SB-5 and SB-6 were analyzed for VOCs and 13 heavy metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools".

The soil samples obtained from the drywells were analyzed for VOCs and 13 heavy metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools", with the exception of the sample obtained from drywell DW-1 on July 31, 1996, which was analyzed for the 13 Metals only.

The groundwater samples collected from soil borings SB-1, SB-2, SB-4, SB-5 and SB-6 were submitted for laboratory analysis. The groundwater samples obtained from soil borings SB-1, SB-2 and SB-4 were submitted for laboratory analysis of volatile organic compounds using EPA Method 624 as well as for the 8 RCRA Metals, with the exception of the groundwater sample from soil boring SB-2 which was submitted for analysis of the 8 RCRA Metals only. The groundwater samples collected from soil borings SB-5 and SB-6 were analyzed for VOCs and 13 Metals as per the protocol specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". The analytical results for the groundwater samples were compared to the values set forth by the New York State Department of Environmental Conservation Water Quality Regulations.

The analytical results indicated that there were no detectable concentrations of volatile organic compounds (VOCs) present in any of the groundwater samples. The metals analysis revealed that there are elevated levels of metals present in both the upgradient (SB-1 and SB-2) and the downgradient (SB-4, SB-5 and SB-6) groundwater samples. Based upon a comparison of the analytical data, it was determined that there is a general decrease in the contaminant concentrations as moving downgradient (south) across the subject site. Although, the analytical results for the groundwater sample from soil boring SB-5 indicated an increase in contaminant concentration. It is believed that the groundwater analytical results for SB-5 are indicative of a "hot spot" in a contaminant plume migrating across the subject site, and are not related to a point source of contaminant discharge on the subject site.

Representative soil samples were collected from drywells DW-1 and DW-2 on May 17, 1996, July 31, 1996 (DW-1 only), and January 28, 1997. Soil samples were collected from drywells DW-3 and DW-4 on January 28, 1997. The soil samples were field screened with a HNU photoionization detector (PID), which is capable of detecting volatile organic compounds (VOCs). The results of the PID screening indicated that there were no detectable levels of VOCs present. The samples were also visually inspected for possible signs of contamination. The soil samples obtained from DW-1 and DW-2 exhibited some discoloration during all sampling rounds.

All of the soil samples collected were submitted for laboratory analysis. The samples were analyzed for volatile organic compounds (VOCs) and also for the 13 metals as specified in the Suffolk County Department of Health Services (SCDHS) "Guidelines for Minimal Equipment and Procedures for Pumping Out Industrial Waste Pools". Please note that the sample obtained from DW-1 on July 31, 1996, was submitted for analysis of the 13 metals only.

The analytical results for the soil samples obtained from the drywells were compared to the Action Levels listed in the Suffolk County Department of Health Services (SCDHS) "Article 12 - Standard Operating Procedure No. 9-95 - Pumpout and Soil Cleanup Criteria". The analytical results for drywells DW-1 and DW-2 indicated that there were no detectable levels of VOCs present in any of the samples collected during the three (3) sampling rounds. However, the metals analysis for drywells DW-1 and DW-2 revealed conflicting results over the three (3) sampling rounds. The analytical results for the samples obtained on May 17, 1996, indicated that there were no constituents detected at levels above their respective regulatory action levels, with the exception of copper, which was detected at a concentration of 1,529 ppm in the sample from DW-1. Therefore, on July 31, 1996, another soil sample was obtained from drywell DW-1 in order to confirm the previous laboratory analytical results. The sample was analyzed for the 13 metals only. The analytical results indicated that there were no constituents present at concentrations greater than their respective regulatory limits and copper was detected at a concentration of only 15.4 ppm. The January 28, 1997, analytical results for the metals analysis for DW-1 and DW-2 revealed that there were no constituents detected at levels above their respective regulatory action levels, with the exception of copper, which was detected at 1,114 ppm in DW-2.

The analytical results for drywells DW-3 and DW-4 indicated that there were on detectable levels of VOCs present in the samples. The results for the metals analysis for DW-3 and DW-4 revealed that there were no constituents detected at levels above their respective regulatory action levels.

Based upon the varied results for the metals analysis on drywells DW-1 and DW-2, it appears that there may have been a laboratory error which has lead to the ambiguity of the results.

Please note that the review of laboratory analytical results for drywells and cesspools, as well as any determination of contamination is made by the Suffolk County Department of Health Services (SCDHS). The review and determination is made on a case by case basis.

On the basis of General Consolidated Industries, Inc. (GCI) Phase I Environmental Site Assessment and Phase II Subsurface Investigation of the subject property, the following environmental concern exists:

1. The subject property is currently listed by the NYSDEC as a Inactive Hazardous Waste Disposal (IHWD) Site, therefore a Phase II Subsurface Investigation was conducted at the subject property to determine if the operations conducted at the site had in fact contaminated the subsurface soils and groundwater, or neighboring properties. The SCDHS has documented contaminated groundwater present in residential water wells located downgradient (south) of the subject property. The results of the SCDHS investigation into the groundwater contamination source indicated that the subject site (Precision Concepts) was responsible for the downgradient contamination of the residential water wells. However, based upon the findings of the Phase II Subsurface Investigation conducted at the site, it appears that the subject property is not responsible for causing the regional groundwater contamination plume in the vicinity of the subject property. Therefore, it appears that the subject property has been inaccurately listed as an IHWD site. The findings of the Phase II Subsurface Investigation indicate that the former operations conducted at the facility have not caused contamination of the groundwater, but rather the subject site is being contaminated via contaminated groundwater migrating across the subject property from an off-site upgradient source. The database searches of the Federal and State lists noted in the above sections revealed one (1) potential concern, specifically the one (1) NPL site; Brookhaven National Laboratory (BNL). The BNL site is located less than one-eighth (1/8) of a mile north (upgradient) of the subject site. Based upon the fact that there is documented contamination of the soil and groundwater at the BNL site, as well as the findings of the Phase II Subsurface Investigation, it would appear that contaminated groundwater from the BNL site is migrating across the subject property, as well as to adjoining downgradient properties. The NYSDEC should be informed of the findings so that the subject property can be removed from the NYSDEC IHWD site list and the responsible party investigated.

5.2 Limitations

The purpose of this investigation was to identify potential sources of contamination at the property, and to satisfy the all appropriate inquiry standard set forth in Section 9601 (35)(b) of CERCLA. The findings and conclusions set forth in this report are based upon information that was available to General Consolidated Industries, during its inspection of the property and after review of selected records and documents. If new information becomes available concerning the property after this date, or if the property is used in a manner other than that which is in this report, the findings and conclusions contained herein may have to be modified. Additionally, while this investigation was performed in accordance with good commercial and customary practice and generally accepted protocols within the consulting industry, General Consolidated Industries, cannot guarantee that the property is completely free of hazardous substances or other materials or conditions that could subject Mr. Vince Marino to potential liability. The presence or absence of any such condition can only be confirmed through the collection and analysis of air, soil and/or groundwater samples, which was beyond the scope of this investigation.

Future events and/or investigation could change the findings stated herein. Should additional investigations encounter differing conditions, sections of this report may require modification.

Limiting Conditions:

The preceding Environmental Assessment is subject to the following conditions and to such other conditions and limiting conditions as are set forth in the report.

1. General Consolidated Industries assumes no responsibility for hidden or latent conditions or misrepresentation by the property owner, his representatives, public information officials or any authority consulted in connection with the compilation of this report.

2. This report is prepared for the sole and explicit purpose for assessing the potential liability with respect to the suspected presence of hazardous materials that may pose a potential health or environmental threat and for evaluating collateral risk associated with the same. This report is not intended to have any direct bearing on the value of the property.

3. The Environmental Assessment Report is for the sole use of the principal parties. No disclosure or reproduction shall be made of the preceding report without the prior written consent of General Consolidated Industries.

4. General Consolidated Industries or any representative of General Consolidated Industries is not required to give testimony with reference to the opinions expressed herein without prior written arrangement.

Disclaimer:

This report is for the use of Mr. Vince Marino as a guide in determining the possible presence of toxic materials on the subject property at the time of the inspection. This report is based on the review of historic records, relating to past occupants, and upon a visual inspection of the surrounding properties at the time of inspection. The records researched may be incomplete, and this report makes no determinations with respect to portions of the surrounding properties which were not inspected. This Phase I report is not a definitive determination of the presence of absence of toxic substances.

Any and all liability on the part of General Consolidated Industries, Inc. shall be limited solely to the cost of this environmental assessment. General Consolidated Industries, Inc. shall have no liability for any damages, whether consequential, compensatory, punitive, or special, arising out of, incidental to, or as a result of, this assessment and report. General Consolidated Industries, Inc. shall have no liability for any cleanup and/or response costs, or any other incidental, or consequential, punitive, or special costs arising out of, incidental to, or as a result of any action against Mr. Vince Marino brought by any federal, state, or local government agency. General Consolidated Industries, Inc. assumes no liability for the use of this assessment and report by any person or entity other than Mr. Vince Marino for whom it has been prepared.

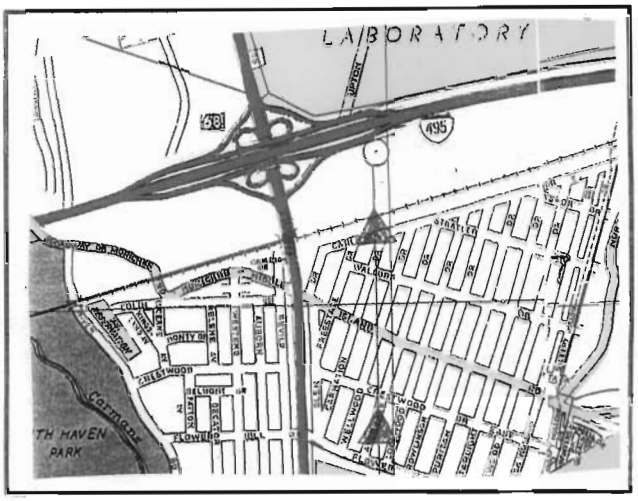
LONG ISLAND EXPRESSWAY SERVICE ROAD

SB-2

SB-1

PAVED PARKING AREA

N



LOCATION MAP

LEGEND

PROPERTY LINE	
BUILDING BORDER	
CONCRETE WALL	
SITE PROPERTY LINE	
DRYWELL	
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LOCATION OF SOIL BORING (SB) SAMPLE	SB-1
LOCATION OF CESSPOOL (C) SAMPLE	C-1

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Environmental & Engineering Consultants

ECT: FIGURE 3 - SITE PLAN

TION: 28 PRECISION DRIVE
SHIRLEY, NEW YORK

SECTION: 584.00 BLOCK: 01.00 LOT: 04.034

NT: MR. EUGENE KEMPEY

WN BY: JA DATE: 6/6/96	PROJECT NUMBER: 960102
CKED BY: MB DATE: 6/6/96	DRAWING NO.: 960102SP
LE: 1" = 55'	SHEET NO.: 1 OF 1

APPENDIX C

HEALTH AND SAFETY PLAN (HASP)
FOR
REMEDIAL INVESTIGATION ACTIVITIES

26 PRECISION DRIVE
SHIRLEY, NEW YORK 11967

MAY 1998

Prepared by:

Kempey Engineering
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&

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SITE WORKER HEALTH AND SAFETY STATEMENT

I have read the Health and Safety Plan (HASP) for the Remedial Investigation at the 26 Precision Drive, Shirley, New York, and I have reviewed and understand the potential hazards and the precautions/contingencies of each potential hazard.

I agree to abide by the stipulations of this HASP and further agree to hold Kempey Engineering or General Consolidated Industries, Inc. (GCI) harmless from, and indemnify against, any accidents which may occur as a result of activities at the site regardless of whether or not they were covered in the HASP.

(Sign)	(Representing)
(Printed Name)	(Date)
(Sign)	(Representing)
(Printed Name)	(Date)
(Sign)	(Representing)
(Printed Name)	(Date)
(Sign)	(Representing)
(Printed Name)	(Date)

1.0 INTRODUCTION

This Health and Safety Plan (HASP) has been written for compliance with "OSHA Hazardous Waste Operations Standards (29 CFR 1910.120)", the guidance documents, "Standard Operating Safety Guidelines (Office of Solid Waste and Emergency Response, 1988)", and the "Occupational Safety and Health Guidance Manual for Hazardous Waste Activities (US Department of Health and Human Services, 1985)".

1.1 Scope and applicability of the HASP

This HASP is designed to be applicable to locations where soil sampling are performed at the 26 Precision Drive site (the "site") in Shirley, New York by all parties that either perform or witness the activities on site. This HASP may also be modified or amended to meet specific needs of the work proposed. This HASP will detail the site safety procedures, site background, and safety monitoring. Contractors will be required to adopt this HASP in full.

The Health and Safety Officer (HSO) will be present at the site to inspect the implementation of the HASP, however, it is the sole responsibility of the contractor(s) to comply with the HASP.

The HASP has been formulated as a guide to complement professional judgement and experience. The appropriateness of the information presented should always be evaluated with respect to unforeseen site conditions which may arise.

1.2 Site Work Zone and Visitors

The site work zone (aka exclusion zone) during the soil sampling will be a thirty (30) foot radius about the work location.

This work zone may be extended if, in the judgement of the health and safety officer (HSO), site conditions warrant a larger work zone.

No visitors will be permitted within the work zone without the consent of the HSO. All visitors will be required to be familiar with, and comply with, the HASP. The HSO will deny access to those whose presence within the work zone is unnecessary or those who are deemed by the HSO to be in non-compliance with the HASP.

All site workers including the contractors will be required to have forty (40) hour hazardous material training (eight (8) hour refresher courses annually), respirator fit test certification, and medical surveillance as stated in 29 CFR 1910.120.

Copies of documentation certifying the above listed requirements will be kept at the site in the possession of the HSO.

The HSO will also give an on-site health and safety discussion to all site personnel, including the contractors prior to initiating the site work. Workers not in attendance during the health and safety talk with be required to have the discussion with the HSO prior to entering the work zone.

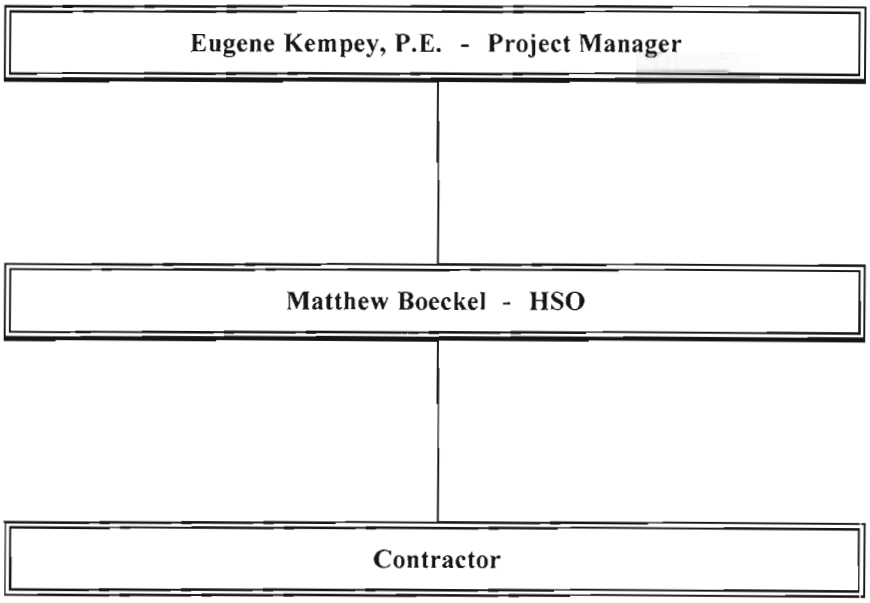
Emergency telephone numbers and directions to the nearest hospital will be kept at the site in the possession of the HSO and will be available to all site workers and visitors.

2.0 KEY PERSONNEL/ALTERNATES

The key personnel/alternates and their responsibilities are given in Figure 1. The project manager for this project is Mr. Eugene Kempey, P.E. The project hydrogeologist will be Mr. Matthew Boeckel, Senior Hydrogeologist. Mr. Boeckel will also act as HSO.

FIGURE 1

Personnel Organizational Responsibility Chart
For
Health and Safety



3.0 SITE BACKGROUND

3.1 Site History and Known Chemical Constituents at the Site

The site is located at 26 Precision Drive, identified on the tax map as Section 584, Block 1, Lot 4.034. The subject site is approximately 1,343 feet east of William Floyd Parkway, Town of Brookhaven, Suffolk County, Long Island, New York. The subject property is located in a commercial neighborhood, the site is bordered on the north by the Long Island Expressway, to the south and west of the site are commercial buildings and to the east is vacant undeveloped land. Brookhaven National Laboratory (BNL) is located less than one-eighth (1/8) of a mile to the north (upgradient) of the subject property. There has been documented contamination of the groundwater in the vicinity of the subject site with 1,1,1-trichloroetane (TCA) and dichloroethane (DCA). The chemicals known to be present at the site are presented in Table 1 and 2.

TABLE 1

Compounds Detected In Groundwater Samples With Threshold Limit Values

CONTAMINANT	SHORT TERM EXPOSURE LIMIT (STEL) 15 MINUTES	TIME WEIGHTED AVERAGE EXPOSURE LIMIT 8 HOUR
Trichloroethane (TCA)	450 ppm	50 ppm
Dichloroethane (DCA)	100 ppm	100 ppm

4.0 TASK/OPERATION HEALTH AND SAFETY ANALYSIS

This section will present health and safety analysis for the soil sampling tasks.

4.1 Soil Sampling Safety Analysis

Sampling of soil will be performed by Kempey Engineering or GCI personnel using a GeoProbe Drill Rig. During leaching pool sampling, no person will enter the leaching pools or place their head below the level of the manholes. The depth to groundwater is estimated to be forty-five (45) feet below grade at the site. Kempey Engineering or GCI personnel will be present to observe the drilling and the health and safety operations. In general, Kempey Engineering or GCI will employ one (1) to two (2) persons at the site. No drilling or other site operations will be conducted by contractors without the presence of a Kempey Engineering or GCI representative on site. In the event that the HSO is not present on the site, the Assistant HSO will implement the HASP.

Based on the site history it has been determined that known potential chemical concerns consist of volatile organic compounds (VOCs) and metals in the soil and groundwater at site.

Organic vapor concentrations (OVC) will be monitored in the work zone by utilizing a HNU Photoionization Detector (PID). The PID will be "zeroed" by exposing the PID to a canister of hydrocarbon-free air (<0.1 parts million (ppm) hydrocarbons). Background organic vapor concentrations (OVC) will then be established in the work zone prior to drilling and recorded in the HSO field book.

Upon commencement of drilling, PID readings will be obtained in the workers' breathing zone. A PID reading will also be taken at the borehole approximately every ten (10) minutes thereafter. At the discretion of the HSO, PID readings may be obtained more frequently. All readings and observations will be recorded in the HSO field book. PID air monitoring will be conducted by Kempey Engineering or GCI personnel.

Steady-state PID readings greater than five (5) ppm in the worker's breathing zone will require upgrading to Level "C" personal protective equipment. Steady-state readings, for this purpose, will be defined as readings exceeding five (5) ppm above background for a minimum of ten (10) seconds. Readings will be obtained at points approximately one (1) foot above and then around the borehole. These points will define the worker's breathing zone.

Upon encountering PID levels greater than five (5) ppm above background in the worker's breathing zone, all personnel will be evacuated from the work zone in the upwind direction (if applicable). Specific evacuation routes will be discussed prior to commencement of work at each location based on work location and wind direction. In addition, an evacuation meeting place will be determined. Level "C" personal protection will be implemented including full-face air-purifying respirators with dust and organic vapor cartridges (personal protective equipment will be described in greater detail in Section 7.0). All Kempey Engineering or GCI personnel and contractors must be properly trained and fit tested prior to donning respirators. If, at any time, PID readings exceed steady-state levels greater than fifty (50) ppm above background, or any conditions exist which the HSO determines will require Level "B" personal protective equipment, all work at the site will cease immediately and all personnel will evacuate the work zone. Evacuation will occur in the upwind direction if discernable. Level "B" conditions are not anticipated to be encountered; however, if Level "B" conditions arise, no site work will be performed by Kempey Engineering, GCI or contractors and a complete evaluation of the operation will be performed and this HASP will be modified.

All drilling personnel will be required to wear chemical-resistant gloves (such as butyl or nitrile) when the potential for dermal contact with the soil samples is possible. Dermal contact with soils removed from the ground by the GeoProbe operations will be avoided.

4.2 Other Safety Considerations

4.2.1 Noise

During GeoProbe operations, operation of generators, or any other operation which may generate potentially harmful levels of noise, the HSO will monitor noise levels with a hand-held sound level meter. Noise levels will be monitored in decibels (dB) in the A-weighted, slow-response mode. Noise level readings which exceed the twenty-nine (29) CFR 1920.95 permissible noise exposure limits will require hearing protection (see Table 2 for permissible noise exposures).

Hearing protection will be available to all site workers and will be required for exceedance of noise exposure limits. The hearing protection will consist of foam, expansion-fit earplugs (or other approvable hearing protection) with an Environmental Protection Agency (EPA) noise reduction rating of at least twenty-nine (29) dB. Hearing protection must alleviate worker exposure to noise to an eight (8) hour time-weighted average of eighty-five (85) dB or below. In the event that the hearing protection is inadequate, work will cease until a higher level of hearing protection can be incorporated.

TABLE 2

Permissible Noise Exposures*

Duration Per Day (Hours)	Sound Level dBA Slow Response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

Note: When the daily noise exposure is composed of two (2) or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C_1/T_1+C_2/T_2$ C_n/T_n exceeds unity, then, the mixed exposure should be considered to exceed the limit value. C_n indicates the total time of exposure at a specified noise level, and T_n indicates the total time of exposure permitted at that level.

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

* Standards derived from 29 CFR 1910.95

4.2.2. Slip/Trip/Fall Preventative Measures

To reduce the potential for slipping, tripping, or falling, the work zone will be kept clear of unnecessary equipment. All site workers will be required to wear work boots with adequate tread to reduce the potential for slipping (work boots must be leather or chemical-resistant and contain steel toes and steel shanks).

4.2.3 Insects and Ticks

Insect and tick problems are expected to be minimal. Potential insect problems include, but are nor limited to, bees, wasps, and hornets. Prior to commencement of work, each work area will be surveyed for nests and hives to reduce the possibility of disturbing these insects. In addition, each site worker will be asked to disclose any allergies related to insect stings or bites. The worker will be requested to keep his or her anti-allergy medicine on site.

Tick species native to Long Island consist of the pinhead-sized deer tick and the much larger dog tick. All site workers will be advised to avoid walking through tall grassy areas where possible and will be advised to check for ticks on clothing periodically.

4.2.4 Heat/Cold Stress

Heat stress may become a concern especially if protective clothing is donned which will decrease natural ventilation. To assist in reducing heat stress the following measures will be taken:

- An adequate supply of water or other liquids will be brought on site. To prevent dehydration, personnel will be encouraged to drink generous amounts of water even if not thirsty.

- A shady rest area will be designated (such as beneath the trees in the northeast corner of the property) to provide shelter during sunny days).

- In hot weather, workers wearing protective clothing may be rotated. When the temperature is over seventy (70) degrees Fahrenheit and personnel are wearing protective clothing, heat stress monitoring may be implemented as follows:

- Heart rate may be measured by counting the radial pulse for thirty (30) seconds at the beginning of the rest period. The heart rate should not exceed 110 beats per minute. If the rate is higher, the next work period will be shortened by ten (10) minutes (or 33%). If the pulse rate is 100 beats per minute at the beginning of the next rest period, the following work cycle will be shortened by 33%. The HSO will decide on the length of work periods and rest periods based on site conditions.

- Body temperature may be measured, if deemed necessary, at the beginning of the rest period. Oral temperature should not exceed ninety-nine (99) degrees Fahrenheit. If it does, the next work period will be shortened by ten (10) minutes (or 33%). However, if the oral temperature exceeds 99.7 degrees Fahrenheit at the beginning of the next period, the following work cycle will be further shortened by 33%. Work will not re-commence until by temperature has dropped below ninety-nine (99) degrees Fahrenheit.

  Indications of heat stress range from mild (fatigue, irritability, anxiety, decreased concentration, dexterity or movement) to fatal. Medical help will be obtained for serious conditions.

Heat related problems are:

Heat Rash

Caused by continuous exposure to heat and humid air and aggravated by chafing cloths. Decreases ability to tolerate heat as well as being a nuisance.

Heat Cramps

Caused by profuse perspiration with inadequate fluid intake and chemical replacement (especially salts). Signs: muscle spasm and pain in the extremities and abdomen.

Heat Exhaustion

Caused by increased stress on various organs to meet increased demands to cool the body. Signs: shallow breathing; pale, cool, moist skin; profuse sweating; dizziness and lassitude.

Heat Stroke

The most severe form of heat stress. Can be fatal. Medical help must be obtained immediately. Body must be cooled immediately to prevent severe injury and/or death. Signs: red, hot, dry skin; no perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

Cold exposure is a concern if work is conducted during cold weather or marginally cold weather during precipitation periods or moderate to high wind velocity periods. To assist in reducing cold exposure the following measure will be taken:

- All personnel will be required to wear adequate and appropriate clothing. This will include head gear to prevent the high percentage loss of heat that occurs in this area (thermal liners for hard hats if hard hats are required).

- Provide a readily available warm shelter near each work zone.

- Carefully schedule work and rest periods to account for the current temperature and wind velocity conditions.

- Monitor work patterns and physical condition of workers and rotate personnel, as necessary.

Indications of cold exposure range from shivering, dizziness, numbness, confusion, weakness, impaired judgement, impaired vision to drowsiness. Medical help will be obtained for serious conditions if they occur.

Cold exposure related problems are:

Frost Bite

Ice crystal formation in body tissues. The restricted blood flow to the injured part results in local tissue destruction.

Hypothermia

Severe exposure to cold temperature resulting in the body losing heat at a rate faster than the body can generate heat.

The stages of hypothermia are shivering, apathy, loss of consciousness, decreasing pulse rate and breathing rate and death.

4.2.5 Potential Electrical Hazards

Potential electrical hazards consist mainly underground power lines. Underground potential electrical hazards will be minimized by having a utility markout performed for the site. In addition, available as-built site blueprints will be used to avoid contact with subsurface utility lines or structures. As a final precaution, prior to drilling at any location, post-hole digging or hand auguring will be performed by the drillers to a depth of three (3) to four (4) feet to check for the existence of subsurface utility lines or structures.

4.2.6 The Buddy System

All activities in contaminated or potentially contaminated areas will be conducted by pairing off the site workers in groups of two (2) (or three (3) if necessary). Each person (buddy) will be able to:

- Provide his or her partner with assistance.
- Observe his or her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his or her partner's protective clothing.
- Notify the HSO or others if emergency help is needed.

The buddy system will be instituted at the beginning of each work day. If new workers arrive on site, a buddy will be chosen prior to the new worker entering the work zone.

4.2.7 Site Communications

Two (2) sets of communication systems will be established at the site: internal communication among personnel on-site, and external communication between on-site and off-site personnel.

Internal communication will be used to :

- Alert team members to emergencies.
- Pass along safety information such as heat stress check, protective clothing check, etc.
- Communicate changes in the work to be accomplished.
- Maintain site control.

Due to ambient noise, verbal communications may be difficult at times. The HSO will carry a whistle (and compressed air horn if respirators are donned) to signal site workers. A single whistle blast will be the signal to immediately evacuate the work zone through the access control point. This signal will be discussed with all site workers prior to commencement of work.

An external communication system between on-site and off-site personnel will be established to :

- Coordinate emergency response
- Report to the Project Manager
- Maintain contact with essential off-site personnel

A field telephone will be available at all times in the HSO's vehicle. In addition, the nearest stationary phone will be identified prior to the commencement of site operations and this location will be relayed to all site workers.

4.2.8 General Safe Work Practices

- No smoking, eating, drinking, or application of cosmetics in the work zone.
- No matches or lighters in the work zone.
- All site workers will enter/exit work zone through the site access point.
- Any signs of contamination, radioactivity, explosivity, or unusual condition such as dead animals will require evacuating the site immediately and reporting the information to the HSO.
- Loose fitting clothing or loose long hair will be prohibited in the work zone during drilling operations.
- A signal person will direct the backing of work vehicles.
- Equipment operators will be instructed to check equipment for abnormalities such as oozing liquids, frayed cables, unusual odors, etc.

5.0 PERSONNEL TRAINING REQUIREMENTS

All Kempey Engineering or GCI personnel and contractor personnel will receive adequate training prior to entering the site. Kempey Engineering or GCI and contractor's personnel will, at a minimum, have completed OSHA approved, forty (40) hour hazardous materials site safety training and OSHA approved, eight (8) hour safety refresher course within one (1) year prior to commencing field work. The HSO will have received the OSHA approved, eight (8) hour course on managing hazardous waste operations. In addition, each worker must have a minimum of three (3) days field experience under the direct supervision of a trained, experienced supervisor.

Prior to site field work, the HSO will conduct an in-house review of the project with respect to health and safety with all Kempey Engineering or GCI personnel who will be involved with field work at the site. The review will include discussions of signs and symptoms of chemical exposure and heat stress that indicate potential medical emergencies presented in Table 3. In addition, review of personal protective equipment will be conducted to include the proper use of air-purifying respirators.

TABLE 3

Signs & Symptoms of Exposure to Chemicals Detected at the Subject Site

TYPE OF HAZARD	SIGNS AND SYMPTOMS
Chemical Hazard	Behavioral changes
	Breathing difficulties
	Changes in complexion of skin color
	Confusion
	Coordination difficulties
	Coughing
	Depression
	Dermatitis
	Dilated Pupils
	Dizziness
	Euphoria
	Fatigue and/or weakness
	Flushed face and/or neck
	Insomnia
	Irregular heartbeat
	Irritability
	Irritation of eyes, nose, respiratory tract, skin or throat
	Headache
	Lacrimation
	Light-headedness
	Muscle fatigue
	Nausea
	Nervousness
	Numbness in limbs

TYPE OF HAZARD	SIGNS AND SYMPTOMS
Chemical Hazard	Paresthesia
	Sleepiness
	Tingling
	Tremors
	Vertigo
	Visual disturbance
	Vomiting
Heat Exhaustion	Clammy skin
	Confusion
	Dizziness
	Fainting
	Fatigue
	Heat rash
	Light-headedness
	Nausea
	Profuse sweating
	Slurred speech
	Weak pulse
Heat Stroke (may be fatal)	Confusion
	Convulsions
	Hot skin, high temperature (yet may feel chilled)
	Incoherent speech
	Staggering gait
	Sweating stops (yet residual sweat may be present)
	Unconsciousness

6.0 MEDICAL SURVEILLANCE PROGRAM

All workers at the site must participate in a medical surveillance program in accordance with 29 CFR 1910.120. A medical examination and consultation must have been performed within the last twelve (12) months to be eligible for field work.

The content of the examination and consultation will include a medical and work history with special emphasis on symptoms related to the handling of hazardous substances, health hazards, and fitness for duty including the ability to wear required personal protective equipment under conditions (i.e., temperature extremes) that may be expected at the work site.

All the medical examinations and procedures shall be performed by, or under the supervision of, a licensed physician.

The physician shall furnish a written opinion containing:

- The results of the medical examination and tests.
- The physician opinion as to whether the employee has any detected medical conditions which would place the worker at increased risk of material impairment of the employee's health from work in hazardous waste operations.
- The physician's recommended limitations upon the worker assigned to the work.
- A statement that the worker has been informed by the physician of the results of the medical examination and any further examination or treatment.

An accurate record of the medical surveillance will be retained. The record will consist of at least the following information:

- The name and social security number of the employee.
- Physicians written opinions, recommended limitations, and results of examinations and tests.
- Any worker medical complaints related to exposure to hazardous substances.

These medical records will be kept on file for a duration of thirty (30) years after the project is completed. EPA will be given ninety (90) days notification prior to destroying the records.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 General Considerations

The two (2) basic objectives of the personal protective equipment (PPE) are to protect the wearer from safety and health hazards, and to prevent the wearer from incorrect use and/or malfunction of the PPE.

Potential site hazards have been discussed previously in Section 4.0. The duration of site activities is estimated to be three (3) to five (5) days. All work is expected to be performed during daylight hours and workdays, in general, are expected to be eight (8) to ten (10) hours in duration. Any work performed beyond daylight hours will require the permission of the HSO. This decision will be based on the adequacy of artificial illumination and the type and necessity of the task being performed.

Personal protection levels for the site activities, based on past investigations, are anticipated to be Level "D" with the possibility of upgrading to Level "C". The equipment included for each level of protection is provided as follows:

Level "C" Protection
Personnel protective equipment:

- Air-purifying respirator, full-face.
- Chemical-resistant clothing includes: Tyvek (spunbonded olefin fibers) for particulate and limited splash protection or Saranex (plastic film-laminated Tyvek) for permeation resistance to solvents.
- Coveralls*, or
- Long cotton underwear.*
- Gloves (outer), chemical-resistant.
- Gloves (inner), chemical-resistant.
- Boots (outer), leather or chemical-resistant, steel toe and shank.
- Boot covers (outer), chemical-resistant (disposable)*.
- Hard hat (face shield)*.
- Escape mask*.
- Two-way radio communications (inherently safe)*.

(*) Optional

Criteria for Selection of Level "C" Protection

Meeting all of these criteria permits use of Level "C" Protection:

- Oxygen concentrations are not less than 19.5% by volume.
- Measured air concentrations of identified substances will be reduced by the respirator below the substance's threshold limit value (TLV).
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any body area left unprotected by chemical-resistant clothing.
- Job functions do not require self-contained breathing apparatus.
- Direct readings are below fifty (50) ppm on the OVA.

Level "D" Protection

Personnel protective equipment:

- Coveralls
- Gloves*
- Boots/shoes, leather or chemical-resistant, steel toe and shank
- Safety glasses or chemical splash goggles*
- Hard hat (face shield*)
- Escape mask*

(*) Optional

Criteria for Selection for Level "D" Protection

Meeting any of these criteria allows use of Level "D" Protection:

- No contaminant levels above five (5) ppm organic vapors or dusty conditions are present.
- Work functions preclude splashes, immersion, or the reasonable potential for unexpected inhalation of any chemicals above the TLV.

Additional Considerations for Selecting Levels of Protection

Another factor which will be considered in selecting the appropriate level of protection is heat and physical stress. The use of protective clothing and respirators increases physical stress, in particular, heat stress on the wearer. Chemical protective clothing greatly reduces natural ventilation and diminishes the body's ability to regulate its temperature. Even in moderate ambient temperatures, the diminished capacity of the body to dissipate heat can result in one or more heat-related problems.

All chemical protective garments can be a contributing factor to heat stress. Greater susceptibility to heat stress occurs when protective clothing requires the use of a tightly fitted hood against the respirator face peace, or when gloves or boots are taped to the suit. As more body area is covered, less cooling takes place, increasing the probability of heat stress.

Wearing protective equipment also increases the risk of accidents. It is heavy, cumbersome, decreases dexterity, agility, interferes with vision, and is fatiguing to wear. These factors all increase physical stress and the potential for accidents. In particular, the necessity of selecting a level of protection will be balanced against the increased probability of heat stress and accidents.

7.2 Donning and Doffing Ensembles

Donning an Ensemble

A routine will be established and practiced periodically for donning a Level "C" ensemble. Assistance may be provided for donning and doffing since these operations are difficult to perform alone.

Table 4 lists sample procedures for donning a Level "C" ensemble. These procedures should be modified depending on the particular type of suit and/or when extra gloves and/or boots are used.

Doffing an Ensemble

Exact procedures for removing Level "C" ensembles must be established and followed to prevent contaminant migration from the work area and transfer of contaminants to the wearer's body, the doffing assistant, and others.

Doffing procedures are provided in Table 5. These procedures should be performed only after decontamination of the suited worker. They require a suitably attired assistant. Throughout the procedures, both worker and assistant should avoid any direct contact with the outside surface of the suit.

TABLE 4

Sample Donning Procedures

1. Inspect the clothing and respiratory equipment before donning (see Inspection in subsection 7.4).

2. Adjust hard hat or headpiece if worn, to fit user's head.

3. Standing or sitting, step into the legs of the suit; ensure proper placement of the feet within the suit; then gather the suit around the waist.

4. Put on chemical-resistant safety boots over the feet of the suit. Tape the leg cuff over the tops of the boots.

5. Don the respirator and adjust it to be secure, but comfortable.

6. Perform negative and positive respirator facepiece seal test procedures:

   - To conduct a negative-pressure test, close the inlet part with the palm of the hand or squeeze the breathing tube so it does not pass air, and gently inhale for about ten (10 seconds. Any inward rushing of air indicates a poor fit. Note the a leaking facepiece may be drawn tightly to the face to form a good seal, giving a false indication of adequate fit.
   - To conduct a positive-pressure test, gently exhale while covering the exhalation valve to ensure that a positive pressure can be built up. Failure to build a positive pressure indicates a poor fit.

7. Depending on type of suit:

   - Put on inner gloves (surgical gloves).
   - Additional overgloves, worn over attached suit gloves, may be donned later.

8. Put on hard hat.

9. Have assistant observe the wearer for a period of time to ensure that the wearer is comfortable, psychologically stable, and that the equipment is functioning properly.

TABLE 5

Doffing Procedures

1. Remove any extraneous or disposable clothing, boot covers, outer gloves, and tape.

2. Remove respirator by loosening straps and pulling straps over the top of the head and move mask away from head. Do not pull mask over the top of the head.

3. Remove arms, one at a time, from suit, avoiding any contact between the outside surface of the suit and wearer's body and lay the suit out flat behind the wearer. Leave internal gloves on, if any.

4. Sitting, if possible, remove both legs from the suit.

5. After suit is removed, remove internal gloves by rolling them off the hand, inside out.

7.3 Respirator Fit Testing

The fit or integrity of the facepiece-to-face seal of a respirator affects its performance. Most facepieces fit only a certain percentage of the population; thus each facepiece must be tested on the potential wearer in order to ensure a tight seal. Facial features such as scars, hollow temples, very prominent cheekbones, deep skin creases, dentures or missing teeth, and the chewing of gum and tobacco may interfere with the respirator-to-face seal. A respirator shall not be worn when such conditions prevent a good seal. The worker's diligence in observing these factors shall be evaluated by periodic checks. Fit testing will comply with 29 CFR 1910.1025 regulations.

7.4 Inspection

The PPE inspection program will entail five (5) different inspection:

- Inspection and operational testing of equipment received from the factory or distributor.
- Inspection of equipment as it is issued to workers.
- Inspection after use.
- Periodic inspection of stored equipment.
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The inspection checklist is provided in Table 6. Records will be kept of all inspection procedures. Individual identification numbers will be assigned to all reusable pieces of equipment and records should be maintained by that number. At a minimum, each inspection should record the ID number, date, inspector, and any unusual conditions or findings. Periodic review of these records may indicate an item or type of item with excessive maintenance costs or a particularly high level of down-time.

TABLE 6

PPE Inspection Checklist

CLOTHING

Before use:

- Determine that the clothing material is correct for the specified task at hand.
- Visually inspect for:
  - Imperfect seams
  - non-uniform coatings
  - Tears
  - Malfunctioning closures
- Hold up to light and check for pinholes.
- Flex product:
  - Observe for cracks
  - Observe for other signs of shelf deterioration
- If the product has been used previously, inspect inside and out for signs of chemical attack:
  - Discoloration
  - Swelling
  - Stiffness

During the work task, periodically inspect for:

- Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- Closure failure
- Tears
- Punctures
- Seam discontinuities

7.5 Storage

Clothing and respirators will be stored properly to prevent damage or malfunction due to exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures, and impact. Storage procedures are as follows:

Clothing:

- Potentially contaminated clothing will be stored in an area separate from street clothing.
- Potentially contaminated clothing will be stored in a well-ventilated area, with good air flow around each item, if possible.
- Different types and material of clothing and gloves will be stored separately to prevent issuing the wrong material by mistake.
- Protective clothing will be folded or hung in accordance with manufacturer's recommendations.

Respirators:

- Air-purifying respirators should be dismantled, washed, and placed in sealed plastic bags.

7.6 Maintenance

Specialized maintenance will be performed only by the factory or an authorized repair person. Routine maintenance, such as cleaning, will be performed by the personnel to which the equipment is assigned. Respirators will be cleaned at the end of each day with alcohol pads or, preferably, by washing with warm soapy water.

7.7 Decontamination Methods

All personnel, clothing, equipment, and samples leaving the contaminated (work zone) area of the site must be decontaminated to remove any harmful chemicals or infectious organisms that may have adhered to them. Decontamination methods either (1) physically remove contaminants, (2) inactivate contaminants by chemical detoxification or disinfection/sterilization, or (3) remove contaminants by a combination of both physical and chemical means. In many cases, gross contamination can be removed by physical means involving dislodging/displacement, rinsing, wiping off, and evaporation. Contaminants that can be removed by physical means include dust, vapors, and volatile liquids. All reusable equipment will be decontaminated by rinsing in a bath of detergent and water (respirators, gloves to be reused). Monitoring equipment will be decontaminated by wiping with paper towels and water.

All used PPE to be discarded will be placed in a fifty-five (55) gallon drum and stored in a secure place at the site while awaiting final disposition.

The effectiveness of the decontamination will be evaluated near the beginning of site activities and will be modified if determined to be ineffective. Visual observation will be used for this purpose. The HSO will inspect decontaminated materials for discoloration, stains, corrosive effects, visible dirt, or other signs of possible residual contamination.

8.0 DECONTAMINATION PROCEDURES FOR SAMPLING AND DRILLING EQUIPMENT

All sampling equipment shall be decontaminated prior to, and following, use at each soil sampling location. Decontamination procedures shall consist of the following:

1. Scrub equipment in a bath of low-phosphate detergent and potable water.

2. Potable water rinse.

3. One percent (1%) nitric acid rinse.

4. Potable water rinse.

5. Methanol followed by hexane rinse.

6. distilled water rinse, air dry.

7. Aluminum foil wrap, shiny side out, for transport.

Personal protective equipment decontamination has been discussed in Section 7.7.

9.0 CALIBRATION PROCEDURES, FREQUENCIES, AND MAINTENANCE

This section will present the calibration procedures, frequencies, and maintenance for the health and safety field monitoring instruments.

The use of the monitoring equipment is presented as follows (the manufacturer's owner's manuals for all equipment used will be present at the site):

1. HNU - this instrument is a photoionization detector (PID) that measures the concentration of airborne ionizable gases and vapors. The HNU does not distinguish between individual compounds and will not read methane. The calibration will be performed with a cylinder of "zero gas" (hydrocarbon free air) to "zero" the instrument and a 100 ppm cylinder of isobutylene to calibrate the span.

The calibration procedures and frequencies for each instrument are presented as follows:

HNU (Photoionization Detector)

Isobutylene at 100 ppm in air will be used as Span Gas. A commercial zero grade gas will be used as the zero gas. To calibrate the instrument, use the Calibration Kit as follows:

1. Connect the supplied regulator to the Span Gas Cylinder. Hand tighten the fittings.

2. Open the valve on the gas bag by turning the valve stem fully counter clockwise.

3. Attach the gas bag adapter nut to the regulator. Hand tighten the fittings.

4. Turn the regulator knob counter clockwise about half turn to start the flow of gas.

5. Fill the gas bag about half full and then close the regulator fully clockwise to turn off the flow of gas.

6. Disconnect the bag from the adapter and empty it. Flush the bag a few times with the Span Gas and then fill it.
7. Close the gas bag by turning the valve clockwise.

8. Press SETUP and select the desired Cal Memory with arrow keys and press ENTER. Press EXIT to leave Setup.

9. Press CAL and expose HNU to Zero Gas. Press ENTER and HNU sets its zero point.

10. HNU then asks for the Span Gas concentration. Enter the Known Span Gas concentration and then connect the Span Gas bag adapter to the inlet.

11. Press ENTER and HNU sets its sensitivity.

12. When HNU's display reverts to normal, HNU is calibrated and ready for use. Remove the Span Gas bag from the inlet.

The instrument will be calibrated prior to the commencement of each day's work. The instrument will be charged overnight prior to each day's work.

10.0 EMERGENCY RESPONSE PLAN

This section will present the Emergency Response Plan (ERP) for the site. Pre-emergency planning will consist of reviewing the ERP with all workers at the site prior to initiation of work.

Personnel Roles

It is anticipated that during the drilling and well installation activities at the site, in general, three (3) persons will be on the site: the HSO, the driller, and the driller's assistant. Should an emergency situation arise at the site, the HSO will assume control and decision-making. The HSO will also resolve all dispute concerning health and safety requirements and precautions. The HSO will also:

- Be authorized to seek and purchase supplies as necessary.
- Have control over activities of everyone entering the site.

The HSO will communicate, by field telephone or other, with off-site personnel to include the Project Manager to evaluate data and assist in the decision-making process. Telephone numbers for the fire department, police ambulance, poison control center, Suffolk County Department of Health Services (SCDHS), and New York State Department of Environmental Conservation (NYS DEC) Spill Response Department (SRD), are listed on the next-to-last page of this document. The hospital which will be utilized during an emergency will be Brookhaven Memorial Hospital. The directions to the hospital, along with the hospital's emergency room telephone number are presented as Appendix A of this document.

Copies of Appendix A of this document will be available at the site and will be placed in all vehicles of personnel involved in activities at the site.

Internal communications will consist of a single whistle (or compressed air horn if Level "C" is donned) blast. This blast will signal all workers to evacuate the work zone by the nearest exit.

Response Follow-Up

Following an emergency, or incident, a detailed report will be generated by the HSO. All equipment will be restored to pre-emergency conditions. The HASP will be reviewed following an emergency to determine if it provides adequate information to assist in dealing with the emergency. The HASP may be revised to incorporate additional information as needed.

Emergency Recognition and Prevention

Before daily work assignments begin, each day a brief on-site meeting will be held by the HSO which will address health and safety issues related to the day's work. Prior to initiation of work, a detailed on-site health and safety meeting will be held to review all potential hazards, contingencies, and safety measures.

Safe Distances and Places of Refuge

The main potential cause of work zone evacuation is a significant vapor release. Vapor release evacuation will be discussed prior to drilling at each site and in general will be in the upwind direction. Wind direction will be monitored at each work location and all workers will be notified of the direction of evacuation prior to commencement of work. Safe distances will be discussed at each location and determined by the HSO. The OVA will be used to determine if workers have evacuated a sufficient distance.

At all times, vehicles which may be utilized in an emergency for transport to the hospital (or other destination) will have clear access to leave the site. The HSO will assure that an emergency vehicle does not become blocked-in by other vehicles.

Site Security and Control

The HSO will control entry of personnel into the work zone. No unnecessary person shall be permitted in the work zone.

Decontamination Procedures During Emergencies

In the event of a medical emergency, decontamination will be performed if it does not interfere with essential treatment. Decontamination will be performed by washing, rinsing, and/or cutting off protective clothing and equipment.

If decontamination cannot be performed, the victim will be wrapped in plastic to reduce contamination to other personnel. Emergency and off-site medical personnel will be alerted to the potential contamination.

Emergency Medical Treatment and First Aid

Medical emergencies will be treated, in general, by medical experts by transporting the victim to the nearby hospital.

A first aid kit will be present on site for minor medical treatment.

APPENDIX A

Emergency Telephone Numbers,

Kempey Engineering and GCI Contact Personnel,

Directions from Precision Avenue to the Hospital

Emergency Telephone Numbers

Suffolk County Police 911

Shirley Fire Department . . . . . .

Ambulance . . . . . .

Poison Control Center . . . . . (516) 542-2323

Department of Health Services . . . . . (516) 853-3000

N.Y.S. Department of Environmental Conservation (DEC) . . . . . (516) 444-0320

N.Y.S. DEC Chemical Spills 1-800-457-7362

Brookhaven Memorial Hospital Emergency . . . . . (516) 657-7763

Kempey Engineering and GCI Personnel

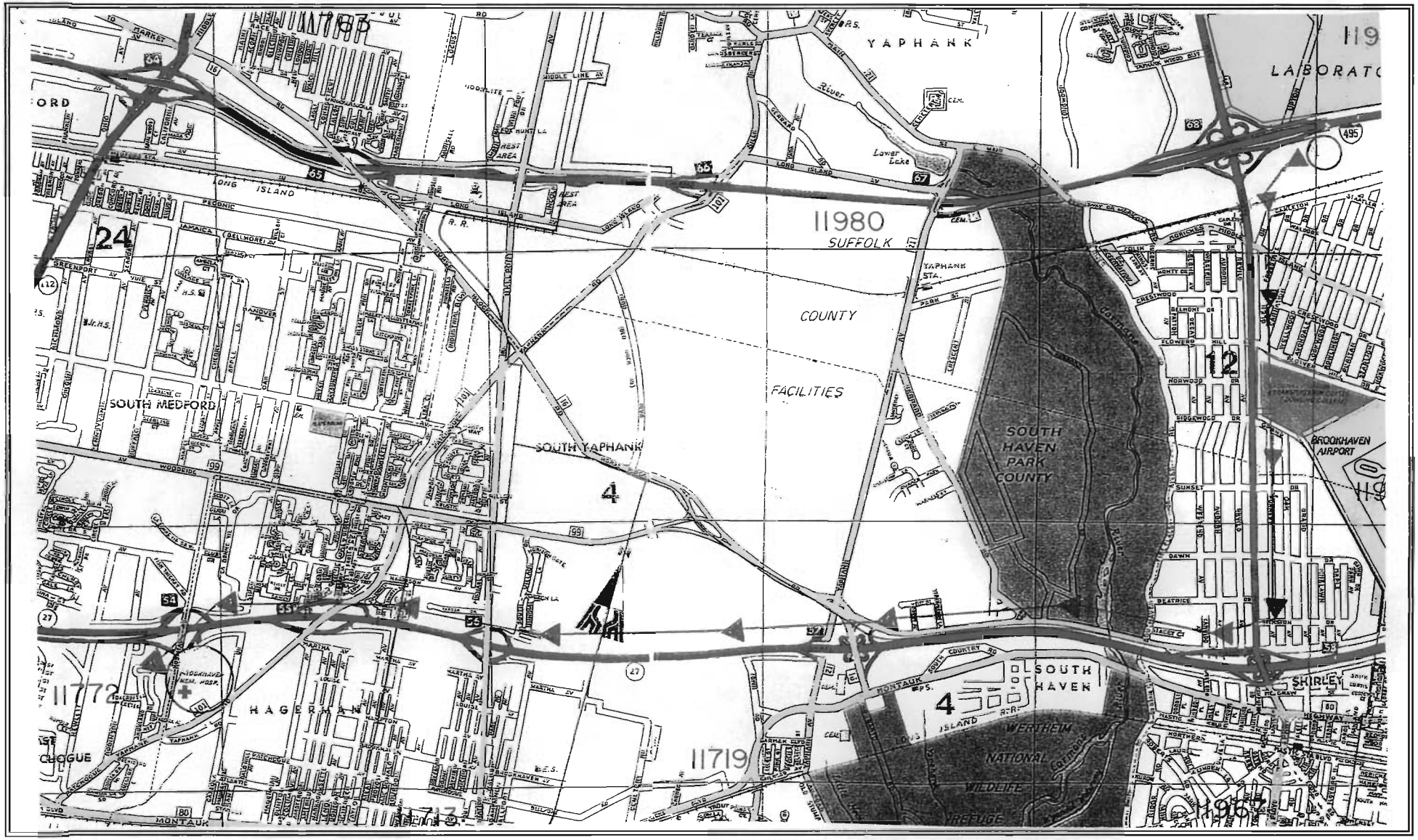
Eugene G. Kempey, P.E. 516-368-3324

Matthew Boeckel, Hydrogeologist 516-368-3324

Directions to Brookhaven Memorial Hospital

Brookhaven Memorial Hospital 516-657-7763

Take Precision Drive west to William Floyd Parkway. Take William Floyd Parkv South. Take Sunrise Highway West to Hospital Road. Make a left to Hospital ' (south) the Brookhaven Memorial Hospital will be on your left. '



DIRECTIONS TO BROOKHAVEN MEMORIAL HOSPITAL
FROM
26 Precision Drive
Shirley, New York