GLARO INC.

735 Old Willets Path
Hauppauge, New York 11788-4100
TEL: 516-234-1717 FAX: 516-234-9510

10 June 1997

Jeffrey Trad, P.E.
Central Office - NYSDEC
Hazardous Waste Remediation Unit, Room, 222
50 Wolf Road
Albany, NY 12233

Dear Jeff,

Enclosed please find the final copy of the Remedial Investigation/Feasibility Study Report as required for Glaro Inc. This copy includes the official seal from Darrel Kost of Kost Environmental Services, Inc., on page four as required.

Please do not hesitate to contact us if there is any further information you require. It has been a pleasure in working with you. We all thank you for your help and guidance through this entire process.

Sincerely,
GLARO, INC.

Kirsten Hedlund

encl.
cc: Smithtown Public Library

GLARO INC.

735 Old Willets Path
Hauppauge, New York 11788-4100
TEL: 516-234-1717 FAX: 516-234-9510

10 June 1997

Smithtown Public Library
1 North Country Road
Smithtown, NY 11787

Dear Sirs,

The Department of Environmental Conservation in Albany requires that we submit this final copy of the Remedial Investigation/Feasibility Study Report for Glaro Inc. for your records.

This copy includes the official seal from Darrel Kost of Kost Environmental Services, Inc., on page four as required.

We trust that this report will be properly filed. Please contact us if you require any further information.

Thank you.

Sincerely,
GLARO, INC.

Kirsten Hedlund

encl.
cc: Jeffrey Trad, P.E. - Central Office, NYSDEC

REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT

GLARO INC.
735 Old Willets Path
Hauppauge, NY 11788
Suffolk County

NYSDEC SITE #1-52-124

March, 1997

Project Requested by: New York State Department of Environmental Conservation

Prepared by: KOST ENVIRONMENTAL SERVICES INC.
121 North Sixth Street
Lindenhurst, NY 11757

Phone: (516) 226-2156
Fax: (516) 957-0646

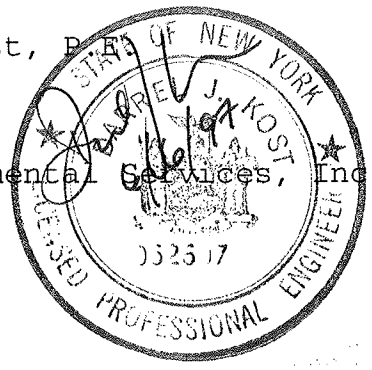
TABLE OF CONTENTS

Table of Contents (continued)

CERTIFICATION

All activities that comprised the Focussed Remedial Investigation were performed in full accordance with the New York State Department of Environmental Conservation (NYSDEC) approved RI/FS Work Plan. The following personnel had primary responsibility for the Remedial Investigation.

Darrel J. Kost, P.E.
President
Kost Environmental Services, Inc.



SECTION 1.0

INTRODUCTION

1.1 Overview

This Remedial Investigation Report has been prepared by Kost Environmental Services Inc. (KES) for Glaro Inc. located at 735 Old Willets Path in Hauppauge, New York. (See Figure 1 - Location Map.)

The New York State Department of Environmental Conservation (NYSDEC) designated the Glaro Inc. site as a Class 2 Inactive Hazardous Waste Disposal Site (Site # 1-52-124) in 1987 due to volatile organic contamination at the property. The designation by the NYSDEC was based upon documentation provided by the Suffolk County Department of Health Services (SCDHS) regarding discharges of tetrachloroethylene and other solvents into dry wells and the surface of the ground, confirmed groundwater contamination, and the threat to public and private wells.

1.2 Site Investigation Approach

This investigation was performed to provide the following information:

(1) Provide sufficient analytical data on the site so that areas that have been previously identified or suspected as potential source areas of contamination are confirmed or are determined to be either free of contamination or below regulatory levels.

Kost Environmental Services, Inc.
Lindenhurst, New York 11757

Glaro, Inc.
RI/FS

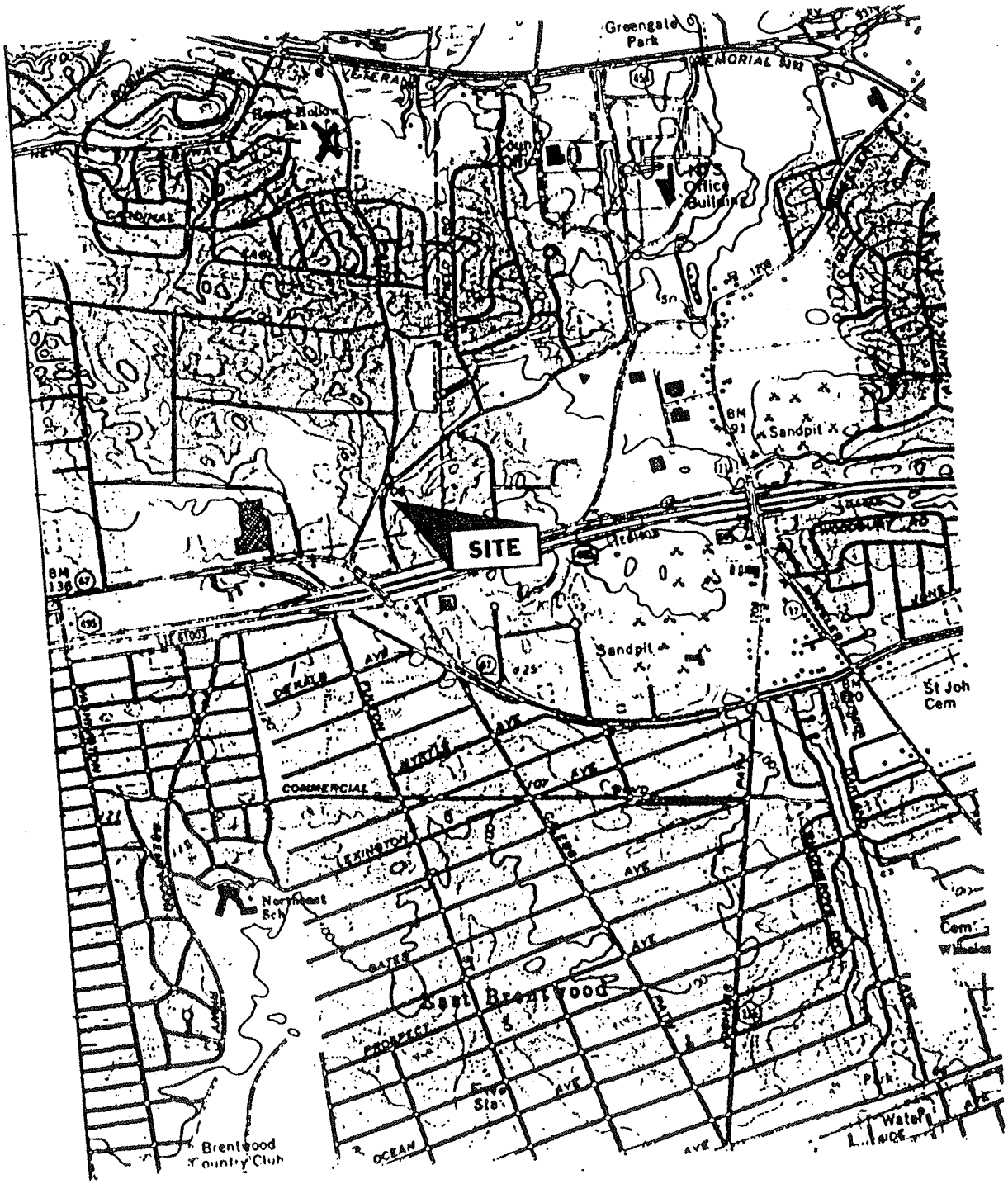


FIGURE 1

LOCATION MAP

(2) If source areas are present, determine the nature, type, physical extent and migratory path of contamination at and/or emanating from that location so that appropriate remedial measures can be implemented.

(3) Determine the impact of contamination quantified on human health and the environment.

(4) Document areas that are free of contamination or are already properly remediated to NYSDEC.

(5) Present and discuss the data necessary to support the development of remedial measures.

(6) Identification and screening of remedial technologies.

(7) Screening and development of remedial alternatives.

1.3 Report Contents

This report contains seven sections, of which this Introduction is Section 1.0. Section 2.0 describes the Site background and setting including the location, history and current conditions at the Site. Section 3.0 presents a description of the Site environmental setting. Section 4.0 presents a summary of chemical contamination based on previous investigations. Section 5.0 presents a summary of the field activities that occurred during the current investigation. Section 6.0 presents the results of the current investigation and Section 7.0 presents a summary of this investigation and the subsequent conclusions that resulted from this investigation.

SECTION 2.0

SITE BACKGROUND AND SETTING

2.1 Site Location

The site is located in western Suffolk County approximately one thousand (1000) feet north of the Long Island Expressway (Interstate 495) and three (3) miles east of the Sagtikos Parkway in the Town of Smithtown and County of Suffolk. Glaro Inc. is located at 735 Old Willets Path, in Hauppauge, New York.

2.2 Site History

Glaro has occupied the present site since 1966 when the property was initially developed. Glaro has conducted operations at the site which are similar to those which occur at present.

Aerial photographs indicated that the site was vacant and undeveloped prior to 1966.

Sanitary wastes from the site are discharged into on-site septic tanks and cesspools located on the southerly portion of the property.

Potable water is supplied to the site by the Suffolk County Water Authority. (SCWA)

2.3 Current Conditions

The site is situated in an industrial park locale of Hauppauge, New York. Savoy Medical Supply Co. is located directly to the south of the site, an asphalt plant to the east and numerous industrial activities to the west.

The approximate 3.3. acre site is presently occupied by two industrial buildings. The Glaro Inc. facility occupies the southerly portion of the property and the Avnet facility occupies the northerly portion. The Avnet facility and associated parking area was developed in 1987 through 1992.

Activities conducted at the Glaro site include receiving aluminum tubing and sheet metal, and some steel products. The metal is cut, bent, spun, punched, stamped, polished, degreased, and spray painted with water soluble paint, and then assembled into finished products.

Five storm water runoff dry wells with open grate covers, and one additional dry well with a closed cover provide drainage for the paved and roof areas of the site (see figure 2-site plan).

SECTION 3.0

ENVIRONMENTAL SETTING

3.1 Climatological Conditions

Prevailing winds on Long Island are generally from the north or northwest in the colder months and from the south or southwest in the warmer months. The average annual wind speed at JFK International Airport, the nearest coastal station which records wind observations, is 12.1 miles per hour (National Oceanic and Atmospheric Administration, 1986, Local Climatological Data, Annual Summary with Comparative Data - JFK International Airport.)

The U.S. Geological Survey (Miller & Frederick, 1969, the Precipitation Regime of Long Island, New York, US Geological Survey Professional Paper 627-A) gives the approximate annual precipitation rate in the area of the site as 43 inches per year. Water losses due to evapotranspiration are given as 28 inches per year. The recharge rate to the groundwater reservoir is therefore 15 inches per year. This recharge occurs predominantly during late fall and early spring.

3.2 Topography and Drainage

The topography of the site slopes to the west and north. The precipitation that falls on the buildings flow to roof drain leaching pools. The asphalt parking lot areas flow to leaching pools.

3.3 Environmental Resources

There are no wetlands, lakes, or streams, located on the subject property. The headwaters of the Nissequoque River are located approximately one (1) mile to the northeast.

3.4 Regional Geology

The regional geology of the Smithtown area was derived from the U.S. Geological Survey Paper # 1669-D entitled, " Hydrogeology of the Huntington-Smithtown Area, Suffolk County, New York (Lubke,1964)" In the vicinity of the site, the geology consists of unconsolidated deposits of cretaceous, tertiary and quaternary age resting upon a surface of southeast-sloping bedrock. The bedrock is probably at igneous and metamorphic origin and of Precambrian to early Paleozoic age.

The Lloyd Sand Member overlies the bedrock and is a stratified deposit consisting of discontinuous layers of sand, gravel, sandy clay, silt and clay. The upper surface of the Lloyd Sand Member occurs at approximately 900 feet below MSL.

The clay member of the Raritan formation overlies the Lloyd Sand and consists of gray, white and red clay and silty clay with lenses of sand. The upper surface of the Raritan Clay occurs at approximately 750 feet below MSL. Overlying the Raritan Clay is the Magothy Formation which consists chiefly of interbedded gray and white fine sand and clayey sand with occasional gray, white, brown, yellow and red clay layers.

Overlying the Magothy Formation are upper Pleistocene age glacial deposits which are composed primarily of outwash deposits consisting of well sorted stratified sand and gravel. The glacial deposits are the uppermost unit in the site vicinity.

3.5 Regional Hydrogeology

The geologic formations that underlie Suffolk County are composed of a series of thick deposits of unconsolidated water-bearing sediments of late Cretaceous and Pleistocene age. These unconsolidated deposits are underlain by crystalline bedrock of Precambrian age.

There are (3) primary water-yielding aquifers underlying Suffolk County and the site. These aquifers, from shallow to deep are: (1) upper glacial; (2) Magothy; and (3) Lloyd aquifers. The Magothy has been reported to be semi-confined (confined in areas where the Gardiners clay unit is present). The underlying Lloyd Aquifer is confined due to an overlying clay unit identified as the Raritan Clay.

The upper glacial aquifer, consisting of highly permeable sand and gravel with occasional thin clay beds, is more commonly used for drinking water in eastern Suffolk County than in the more densely populated western Suffolk County. The Magothy aquifer is

the principal water supply aquifer underlying Suffolk County. It consists primarily of lenticular beds of very fine to medium sand that are interbedded with clay and sandy clay, silt and some gravel and sand. Beds of coarse sand with gravel are common in the lower 100 to 150 feet of the aquifer. The Magothy is absent in many areas along the north shore and reaches a thickness of approximately 700 feet beneath the Hauppauge area.

Below the Magothy aquifer is the Raritan clay formation. This formation is a significant confining unit above the Lloyd aquifer that consists mainly of clay and silty clay from 0 to 200 feet in thickness. The clay has a very low hydraulic conductivity, but does not totally prevent movement of water between the Magothy and the underlying Lloyd aquifer.

The Lloyd aquifer is the oldest and deepest water-bearing unit. It unconformably rests on impermeable crystalline bedrock and consists of lenticular deposits of clay, silt, sandy clay, sand and gravel. The upper surface of the aquifer dips southeast from about 500 feet below sea level in the northern part of the county to more than 1400 feet below sea level at the southern portion. The Lloyd aquifer ranges from 200 to 300 feet in thickness within the county.

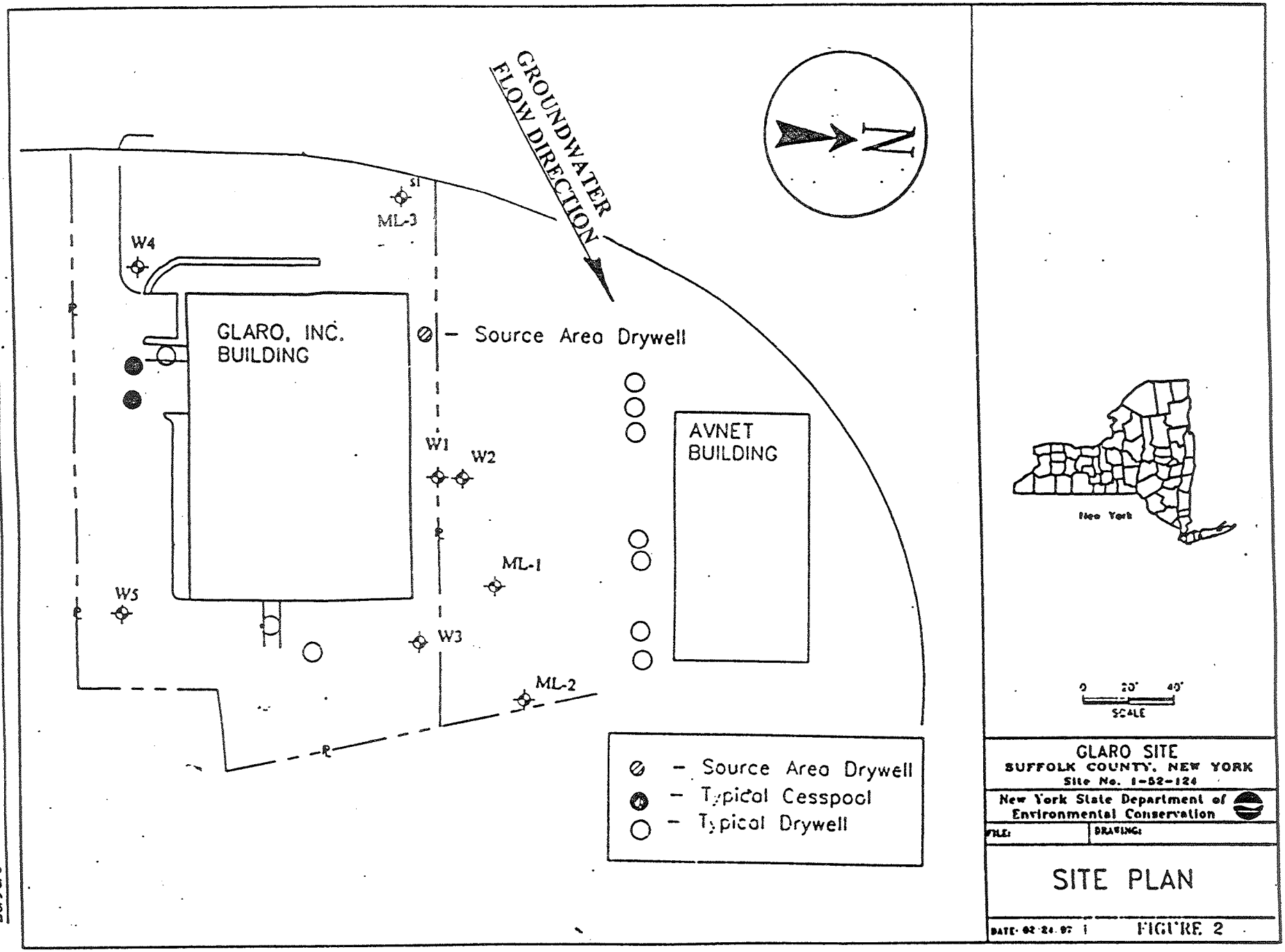
The regional groundwater flow direction beneath the site has been mapped to be northeast.

3.6 LOCAL HYDROGEOLOGY

The local hydrogeologic units correspond to the previously discussed regional hydrogeolgic units. In the vicinity of the site, the shallow aquifer generally includes saturated coarse sands and gravel and in some areas, hydraulically connected finer grained sand and gravel beds in the upper part of the Magothy formation., Water levels in shallow wells fluctuate seasonably on an average between 1 and 4 feet. The intermediate aquifer includes the bulk of the Magothy aquifer down to the top of the clay member of the Raritan formation. The top of the clay member is estimated at approximately 750 feet below grade in the vicinity of the subject site. The Lloyd or deep aquifer is located beneath the clay and is estimated at 900 feet beneath the site. Bedrock is beneath the deep aquifer and is estimated at 1150 feet beneath the subject site. (USGS 1669-0)

The predominant horizontal groundwater flow direction based on groundwater elevation maps of the Suffolk County Department of Health and on-site monitoring wells was to the northeast (see Figure 2 in Appendix.) The depth to groundwater underlying the

GLARO, INC. SITE 1-52-124
PROPOSED REMEDIAL ACTION PLAN



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site is approximately 75 feet below grade. Utilizing a published hydraulic conductivity value of 1500 gpd/ft 2 (Geological Survey Professional paper 627 -E) a porosity of 30 percent and a calculated gradient ranging between 0.0015 and 0.0016 ft/ft, the groundwater on-site is estimated to flow at a rate of approximately 1.0 feet per day in a northeasterly direction.

This site is located within Hydrogeologic Zone 1 defined in "Long Island Areawide Waste Treatment Management Plan" also known as the Nassau/Suffolk 208 Plan in 1978. This zone is a primary source of drinking water for much of Long Island. Groundwater Management Zone 1 covers areas characterized by a deep flow system which generally contributes recharge to the Magothy aquifer.

The site is located to the east of the Oak Brush Plains Special Groundwater Protection Area (SGPA) as designated in a document by the Long Island Regional Planning Board (L I R P B). This study designated areas which afford a unique opportunity to preserve Long Island's groundwater resources.

3.7 Regional Groundwater Quality

The site is located in an industrialized area. Within a three quarter (3/4) mile radius west and hydraulically upgradient of the site is a NYSDEC Class 2 listed inactive hazardous waste

disposal site identified as Computer Circuits. (NYSDEC Site No. 1-52-034). Groundwater beneath and downgradient of the Computer Circuits site has been documented and chlorinated VOC's, heavy metals and plating wastes.

Directly adjacent and south of the subject property there is a documented discharge of " extremely high levels" of 1,1,1, trichloroethane, 1,1, dichloroethane, 1,1,2 trichloroethylene, p-dichlorobenzene, toluene and tetrachloroethylene to on-site sanitary septic tanks. (Suffolk County Dept. of Health Services 7/1/87). This site was identified as Savoy Medical Supply, 745 Calebs Path, Hauppauge, New York. Groundwater monitoring results obtained from a well located on the Savoy property adjacent to the Glaro property line indicated the presence of 1,1,1 Trichloroethane, 1,1 dichloroethane and 1,2 dichloroethene at concentrations of 79 ppb, 34ppb and 5 ppb in 1990.

Subsequently, in 1994 Glaro installed monitoring wells on its property just north of the Savoy property line and detected concentrations of 1,1 dichloroethane, 1,1 dichloroethane, 1,2 dichloroethene, 1,1,1 trichloroethane, trichloroethylene and tetrachloroethane. (See Groundwater Investigation Report, Kost Environmental Services Inc. - 1994)

3.8 PUBLIC WATER SUPPLY

Potable water is supplied to the site by SCWA. The closest downgradient SCWA well field is located approximately 9000 feet northeast of the subject site. That well field is identified as the Wheeler Road Hauppauge well field and is located at the intersection of Veterans Highway and Wheeler Road. The well field consists of four (4) wells (515746, 519399, 523183 and 538491.) which are 128 feet, 131 feet, 340 feet, and 383 feet deep, respectively. These wells are connected to a granulated activated carbon (GAC) system for treatment purposes, and is used on a periodic " as needed basis."

SECTION 4.0

CHARACTERISTICS OF CHEMICAL CONTAMINATION

BASED ON PREVIOUS INVESTIGATIONS

Previous site investigations conducted at the facility were reviewed and a summary is presented below.

In July 1981 the Suffolk County Department of Health Services sampled an industrial leaching basin located on the north side of the Glaro building. The analysis indicated the presence of tetrachloroethylene (117,000 ppb.) 1,1,1 trichloroethane (530 ppb), and 1,1,2 trichloroethylene (75 ppb).

The SCHS requested that the discharge to this pool cease immediately and that the pool be cleaned out. This pool was receiving the condensate from a "degreasing" machine that was utilized by Glaro in its manufacturing operation. In September 1981,the leaching pool was cleaned out and the SCDHS gave permission to reuse the pool again. In October 1981, the SCDHS notified Glaro Inc. regarding the storage of drums and compliance with Article 12 of the Suffolk County Sanitary Code. In December 1981, the SCDHS notified Glaro Inc. regarding samples taken from the industrial leaching pool and organic solvent contamination.

Subsequently, a clean out of the pool occurred in February 1982 regarding the removal of liquid and some sludge. In April 1982, Glaro Inc. informed the SCDHS that it had abandoned use of the drainage pool. In June 1982, the SCDHS approved construction plans of interior drum storage as requested earlier by the County. The storage area was constructed and inspected in April 1983. A Notice of violation was then issued in January 1985 by the SCDHS regarding the discharge of liquid from the degreasing operation onto the ground outside of the Glaro building. Sampling indicated the presence of tetrachloroethylene. Subsequently, in February, 1985 Glaro informed the SCDHS that it was using an evaporation process and no longer discharged any liquids onto the ground. Glaro then pursued obtaining the necessary air permits for this evaporation process. Due to the numerous discharges of organic solvents without a permit, the SCDHS scheduled a hearing in April, 1985 with an Order on Consent No. 1 W 85 - 19 agreed to in May 1985. The o.o.c. included the installation of groundwater monitoring wells and a monetary penalty. The three monitoring wells were installed in December, 1985/January 1986. Groundwater sampling and analysis was then performed by the SCDHS in December 1986. The results indicated the presence of 1,1,1 trichloroethane, 1,1,2 trichloroethylene, tetrachloroethylene and cis,

dichloroethylene in three wells. The highest concentration of an organic compound was 11,000 ppb of 1,1,2 trichloroethylene in wells # 1 and # 2.

In February 1987 the SCDHS acknowledged through internal memorandum that the groundwater test results were elevated and that some type of remedial treatment would be necessary. In addition, the SCDHS acknowledged that adjacent companies to the Glaro site utilized similar solvents and that an extensive ground water investigation must take place to define the extent of the plume. In May 1987, the SCDHS submitted documentation to the NYSDEC to have the Glaro site added to the " Registry of Inactive Hazardous Waste Disposal Sites as site # 152124. In September of 1994 a groundwater investigation was undertaken by Glaro Inc. to determine groundwater flow, possible off site sources of contamination and groundwater quality at the site. The investigation indicated that chlorinated hydrocarbon contamination still existed at the site at much lower concentration than previously observed. The investigation indicated off-site sources of contamination were impacting the Glaro site. At the present time, the primary area of concern on the site is the previously abandoned leaching basin on the north side of the building.

SECTION 5.0

SITE INVESTIGATION TASKS

The tasks that were performed during the Remedial Investigation are presented below. These tasks consisted of field investigations and associated data evaluation designed to evaluate the nature and concentration of soil and groundwater contamination, if any, at portions of the site and, if necessary, to provide information necessary for evaluation of potential Interim Remedial Measures (IRMs) for the site. The specific details of the field activities as they occurred are detailed in the field reports in Appendix B.

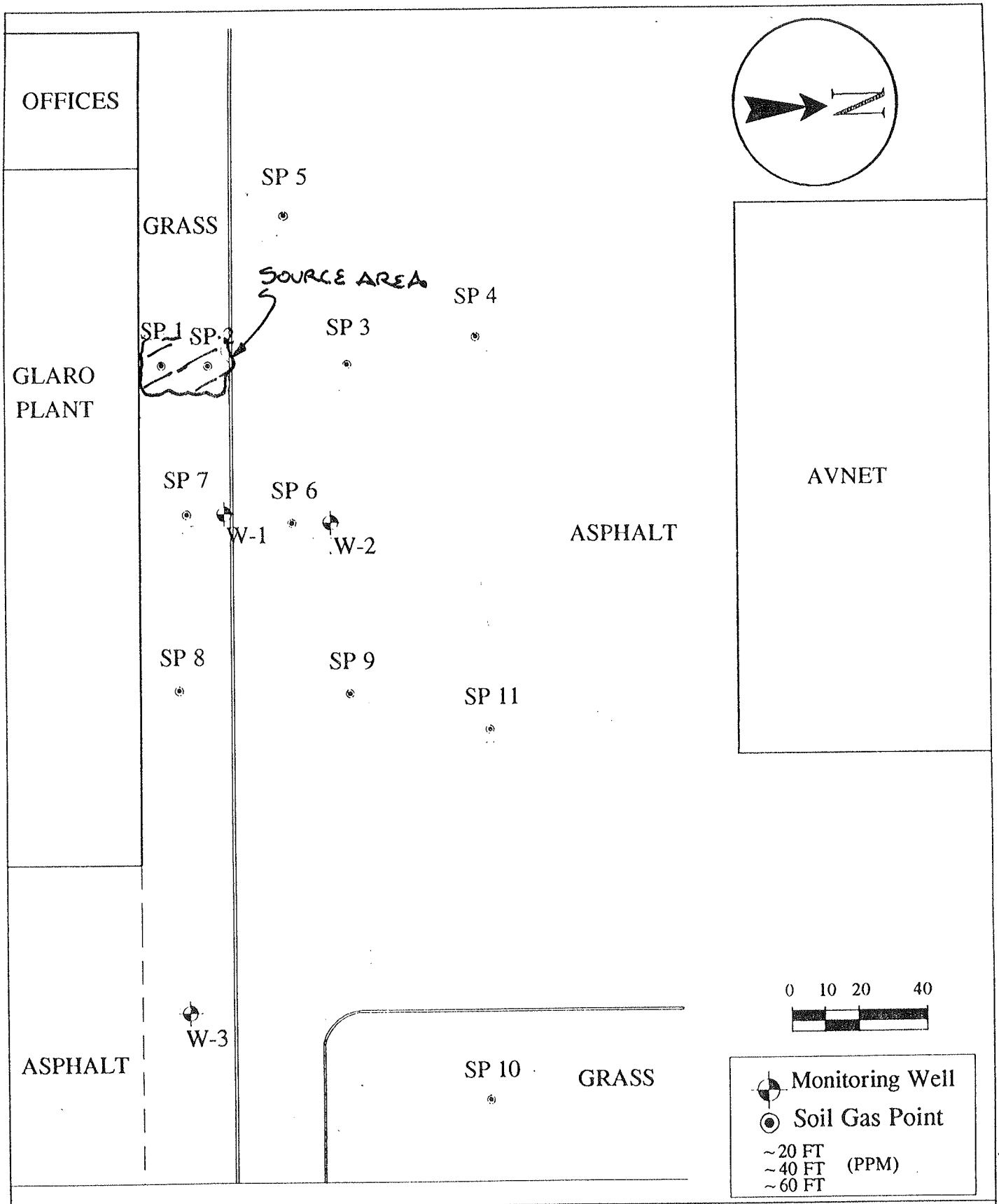
5.1 SOIL GAS SURVEY

A soil gas survey was conducted on the northerly side of the Glaro site in order to determine the vertical and horizontal extent of the TCE and PCE concentrations in the soil column. A grid pattern was established with the main source of the contamination i.e. a leaching basin, being the westerly limit and then proceeding in an easterly direction. Soil gas samples were obtained at eleven probe locations i.e. SP-1 through SP-11 utilizing a" direct-push" device to advance a retractable soil gas sampling probe to

three predetermined depths at each probe location. Probe rod, retractable points, and down hole equipment were steam cleaned before and after each probe location. Soil gas samples were obtained at various depths below grade at each probe location.

Initially soil gas samples were to be collected at depths of approximately 22 ft. 44 ft. and 60 ft. below grade at each probe location. However, due to field conditions including refusal and non definitive; soil gas results, it was determined during drilling operations that soil gas samples would be limited to the 22 ft. and 44 ft. depths with an additional two (2) soil gas locations. This determination was made in concurrence with the on-site NYSDEC project manager, Mr. J. Trad, P.E. Soil gas samples were pre-screened with a photoionization detector (PID) to determine the presence of organic vapors. Additional soil gas samples i.e. not the samples pre-screened with the PID, were analyzed on site by a portable gas chromatograph for target compounds i.e. trichloroethylene (TCE), tetrachloroethane (PCE) vinyl chloride, dichloroethylene, and trichloroethane. (see Figure 3 for soil gas locations.)

The portable gas chromatograph was calibrated for TCE ;and PCE using standards prepared by Scott Specialty Gases Inc.



ENVIRONMENTAL ASSESSMENT & REMEDIATIONS
225 Atlantic Avenue, Patchogue, NY 11772
TEL:(516) 447-8400 FAX:(516) 447-6497

FIGURE 3

SOIL GAS LOCATIONS

GLARO Inc.
Hauppauge, NY

Detection limits of 100 ppb were utilized. Four gas samples were also collected and transported to H2M Labs, Inc. a NYSDOH certified laboratory for Purgeable Halocarbon analysis (SW 846, method 8240.) These samples were duplicates of samples analyzed by the portable GC and were used to provide quality assurance for the on-site soil gas analysis.

5.2 SOIL SAMPLING.

Soil samples were obtained in June, 1996, from the site at four (4) locations which were identified as SB-1 through SB-4 (See Figure 4 for soil boring locations). The samples were obtained utilizing a rotary drill rig equipped with hollow stem augers and split spoon sampling devices. The samples were also screened in the field with a photoionization detector (PID) Samples were obtained in the source area (SB-1) at depth of 1-2 ft; 5-7 ft; 20-22 ft; 42-44 ft; and 64-66 ft. Groundwater was encountered at approximately seventy (70) feet below grade. Samples at the nearest downgradient location (SB-4) which were adjacent to existing monitoring wells MW-1 and MW-2, were obtained at depths of 1-3 ft; 5-7 ft.;20-22 ft.; 42-44 ft.; and 64-66 ft. Samples at the remaining downgradient locations i.e. SB-2 and SB-3, were obtained at depths of 20-22 ft; 42-44 ft; and 64-66 ft.

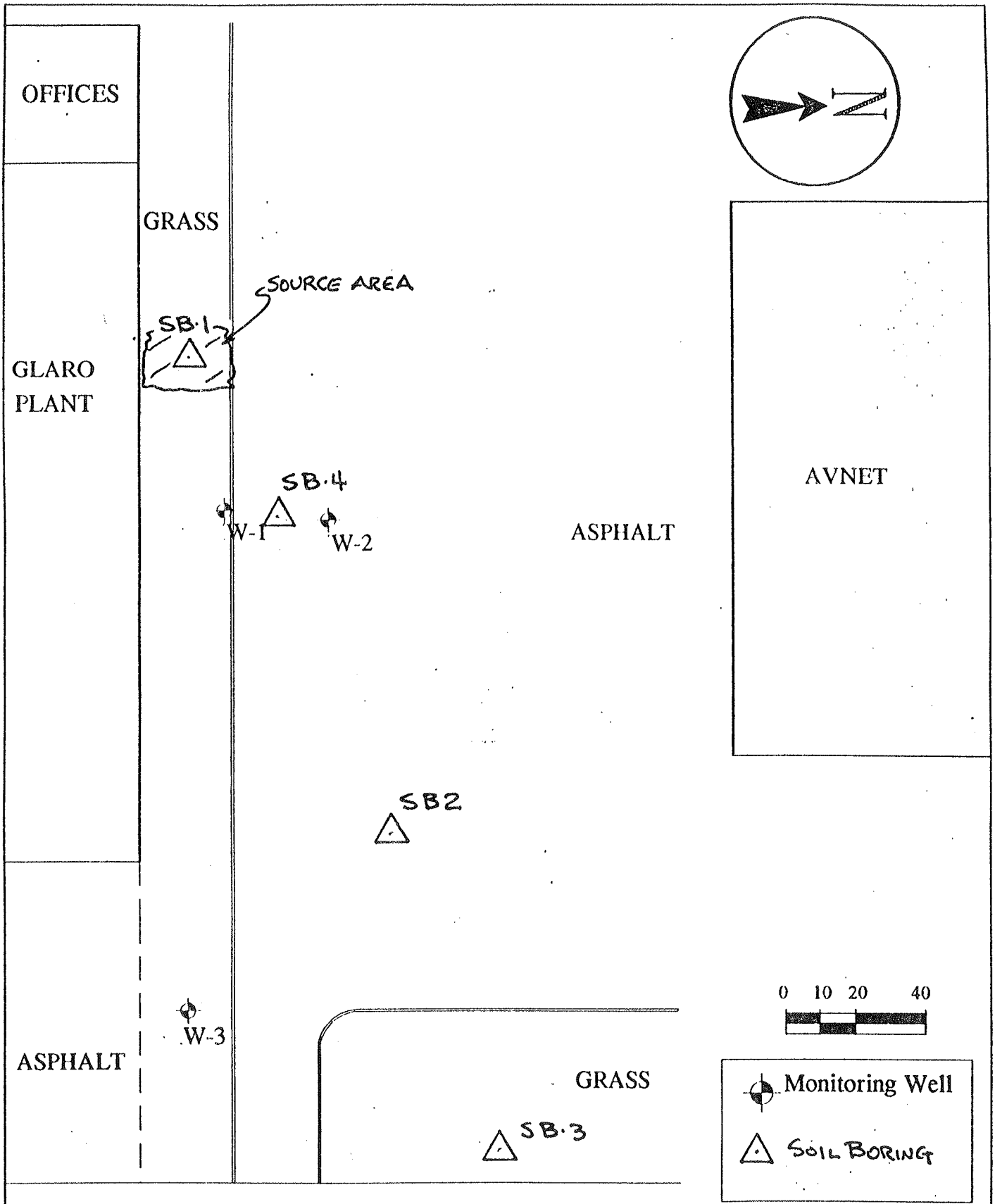


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FIGURE 4
SOIL BORING LOCATIONS

GLARO Inc.
Hauppauge, NY

Each sample was transferred to a laboratory-supplied sample container. Each sample container was labeled with the site location, boring number, depth interval, and date and time of sampling. The labeled sample containers were placed in laboratory-supplied coolers with ice or chemical ice packs to depress the temperature to four degrees celsius. A chain-of-custody form was completed and kept with the samples in the cooler to document the sequence of sample possession. The sample cooler was delivered to the laboratory on the following day for Volatile Halogenated Organics analysis (NYSDEC ASP Method 8010).

5.3 EXISTING MONITORING WELL SAMPLING

In December,1985/January,1986, three (3) groundwater monitoring wells were installed by Glaro, Inc. as a requirement of Suffolk County Department of Health Services (SDCHS) Order on Consent #1-W-85-19. These wells consisted of four inch (4") polyvinylchloride (PVC) material, were screened at the water table with 20' of PVC slotted pipe, and were located downgradient of the source area (see figure 5). Groundwater sampling and analysis was then performed by the SCDHS in 1986 with the presence of 1,1,1, trichloroethane, 1,1,2 trichloroethylene, tetrachloroethylene, and cis, dichloroethylene detected. The above noted three (3) existing

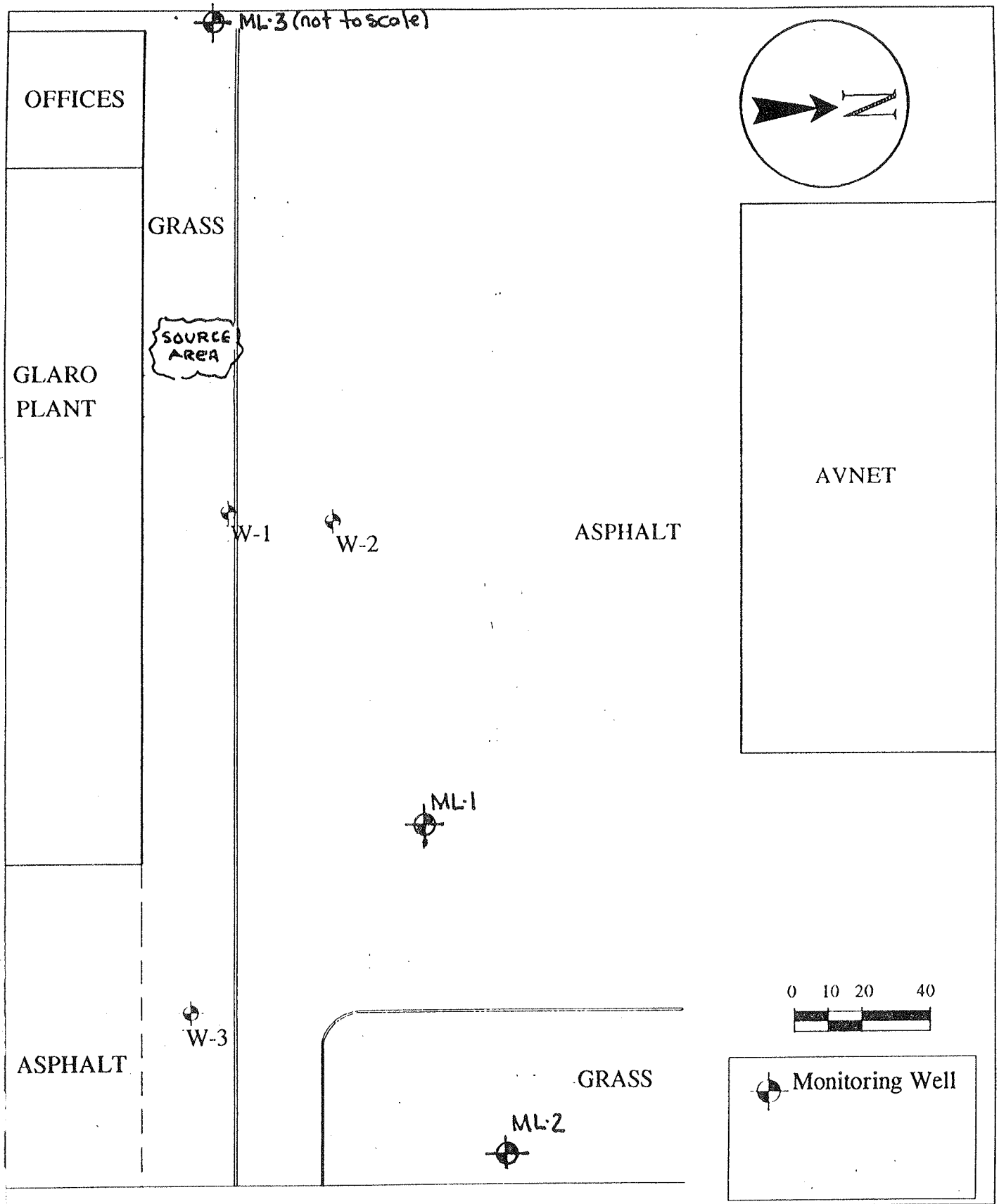

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FIGURE 5 GW MON.WELLS

GLARO Inc.
Hauppauge, NY

monitoring wells, W-1, W-2, and W-3 were also sampled and analyzed as part of this investigation. The procedures for the groundwater sampling were as follows;

1. Submersible pump was utilized to purge each well a minimum of three casing volumes;

2. The submersible pump was decontaminated after each well utilizing potable water and low phosphate detergent; a potable water rinse; a methanol rinse followed by a hexane rinse; a deionized waster rinse, and allowed to air dry;

3. Disposable bailers were utilized for sample acquisition at each well location. A field equipment blank was prepared using the bailers. A dedicated polypropylene line was attached to each bailer. The sample bottles for halogenated volatile organic analysis were filled to zero head space.

4. Each sample bottle was labeled with the site location, well number, date, and time of sampling. The labeled sample bottles were placed in

laboratory supplied coolers with ice to depress the temperature. A chain-of-custody form was filled out and kept with the samples in the coolers to document the sequence of sample possession. The sample coolers were delivered to the laboratory on 7-30 96 and were analyzed for Volatile Organics according to the requirements of the NYSDEC ASP Method 8260 with category B deliverables.

5.4 MULTI-LEVEL GROUNDWATER MONITORING SAMPLING

Three multi-level groundwater monitoring wells were installed in June 1996, on the northerly side of the Glaro property to assess groundwater quality. Two multi-level wells (ML-1 &ML-2) were installed down gradient from the source area and the existing monitoring wells (MW-1 & MW-2) and a third well (ML-3) were installed upgradient from the "source area". (see figure 5) The multi-level monitoring wells provided a means to obtain down-gradient water quality from various discrete depths at each well location i.e. vertical profiling as well as horizontal mapping.

The multi-level monitoring wells were constructed of 1/2" diameter schedule 40 PVC flush joint riser with a terminus of 1/2" diameter by 1 foot 0.010" slotted schedule 40 PVC flush joint screen. Each 1/2" diameter well was "bundled" around a 2" diameter

schedule 40 PVC flush joint riser with a 2" diameter by 5 ft. schedule 40, 0.010" slotted PVC joint screen. The screen intervals for the multi-level monitoring wells varied for each location due to subsurface conditions including "sand heaving" during the withdrawal of the augers, "silting" of the 1/2" diameter wells and broken PVC piping. The screen intervals started at 112.5 ft, 138 ft, and 120 ft. below grade for ML-1, ML-2 and ML-3 respectively. Successive 1/2" diameter wells were staggered at 7.5 ft. higher than the previous one at each location with the highest well located at 75 ft, 85.5 ft,and 67.5 ft. below grade for ML-1, ML-2, and ML-3 respectively.

A total of twenty-two (22) groundwater samples were obtained from these "cluster" wells and were analyzed for Volatile Orgnics according to the requirements of the NYSDEC ASP method 8260 with category B deliverables.

The procedures for groundwater sampling of the "cluster" wells were as follows;

1. Dedicated polyethylene tubing was utilized for each well to obtain groundwater samples.
2. Three casing volumes were purged from each well prior to sampling.
3. Samples were then obtained utilizing polyethylene

tubing with a check valve. The check valves were de-contaminated between samples.

4. Each sample bottle was labeled with the site location, well number, date, and time of sampling. The labeled sample bottles were placed in laboratory-supplied coolers with ice to de-press the temperature . A chain-of-custody form was filled out and kept with the samples in the coolers to document the sequence of sample possession. The sample coolers were delivered to the laboratory on 7-26-96 and 7-29-96 were analyzed for Volatile Organics.

5.5 QUALITY ASSURANCE/QUALITY CONTROL

Sampling Equipment Decontamination Procedures

Decontamination was minimized by using dedicated sampling equipment (disposable acetate soil sample liners and disposable groundwater polyethylene tubing and bailers) with field blanks performed. The check valve used on the polyethylene tubing to obtain groundwater samples was decontaminated between samples. The decontamination procedures used for non-disposable, non-dedicated equipment were as follows;

1. Potable water and low-phosphate detergent;
2. Potable water rinse;
3. A methanol rinse followed by a hexane rinse;
4. Deionized water rinse;
5. Air dry.

Chain of Custody Procedures

For each day of sampling, a chain-of-custody sheet was completed and submitted to the laboratory (a copy of the chain-of-custody was retained by KES). The chain-of-custody sheet included the project name, the sampler's signature, the sampling locations, intervals, and analysis parameters requested.

QA/QC Samples

QA/QC samples were obtained during the soil gas, soil, and groundwater sampling. During the soil gas sampling, every fifth sample was collected and transported to the H2M laboratory for Purgeable Organics analysis (EPA Method 601). Tenax tubes were utilized for sample acquisition. The samples were duplicates of samples analyzed by the portable GC.

During groundwater and soil sampling, one trip blank was provided by the laboratory for each cooler of VOC samples to be submitted to the laboratory for VOC analysis. The trip blanks were prepared from analyte-free deionized water by the laboratory and

remained in the coolers in which the samples were stored. Trip blanks were analyzed for VOCs. The purpose of trip blanks is to ensure that no VOC cross-contamination of samples occurred in the sample cooler and to attest to laboratory water quality. No cross-contamination was detected.

A matrix spike and matrix spike duplicate for groundwater samples and for the soil samples were submitted to the laboratory by obtaining an extra volume of sample. The purpose of the matrix spike and matrix spike duplicates are to confirm the accuracy and precision of the laboratory and to monitor site specific matrix effects on analysis methods. The accuracy and precision of the laboratory were found to be acceptable and no matrix effects were indicated.

SECTION 6.0

Site Investigation Results

This section presents the results of the site investigation regarding soil and groundwater activities.

6.1 Soil Chemical Analytical Results

Table 6.1 provides a summary of the data regarding soil samples taken at the site. The results indicate that the only VOC detection occurred in the source area at boring SB-1.VOC detection occurred at the 0-2 ft, 5-7 ft, and 20-22 ft. boring depths. The "NYSDEC Soil Cleanup Objectives" concentration for one compound (cis-1,2-Dichloroethene) was exceeded at the 5-7 ft. interval i.e. 1800 ug/kg vs 400 ug/kg. There were no VOCs detected at levels above the detection limit at boring locations SB-2, SB-3 and SB-4.

In summary, the soil investigation shows that no VOCs were detected at levels above the detection limits except for the source area at three sampling points i.e. 0-2 ft, 5-7 ft, and 20-22 ft. In addition, there was only one exceedence of the DEC's, " Recommended Soil Cleanup Objectives (TAGM 94-4046)".

6.2 Groundwater Chemical Analytical Results

Table 6.2 and 6.2A provide a summary of the data regarding

GLARO, INCORPORATED SITE (1-52-124)

SUMMARY OF SOIL INVESTIGATION RESULTS

TABLE 6.1

Sampling Point Sampling Date	Sample Depth(ft)	trans-1,2-DCE	1,1-DCE	cis-1,2-DCE	1,1 DCA	1,1,1 TCA	TCE	PCE
VOCs (ppb or ug/kg)								
06/21/96								
SB-1	0-2	<1	<1	<1	<1	<1	7	1100
SB-1	5-7	9	<1	1800	<1	<1	<1	2
SB-1	20-22	<1	<1	7	<1	<1	18	13
SB-1	42-44	<1	<1	<1	<1	<1	<1	<1
SB-1	64-66	<1	<1	<1	<1	<1	<1	<1
06/20/96								
SB-2	20-22	<1	<1	<1	<1	<1	<1	<1
SB-2	42-44	<1	<1	<1	<1	<1	<1	<1
SB-2	64-66	<1	<1	<1	<1	<1	<1	<1
SB-3	20-22	<1	<1	<1	<1	<1	<1	<1
SB-3	42-44	<1	<1	<1	<1	<1	<1	<1
SB-3	64-66	<1	<1	<1	<1	<1	<1	2
SB-4	0-2	<1	<1	<1	<1	<1	<1	<1
SB-4	5-7	<1	<1	<1	<1	<1	<1	<1
SB-4	20-22	<1	<1	<1	<1	<1	<1	<1
SB-4	42-44	<1	<1	<1	<1	<1	<1	<1
SB-4	64-66	<1	<1	<1	<1	<1	<1	<1

J=Estimated Value, tentatively identified and quantified less than lower detection limit
<=Less Than
>=Greater Than

groundwater samples taken from the multi-level wells (M1, ML-2, ML-3) and the existing wells (W1,W2,W3).

The upgradient location ML-3 had detected concentrations of 1.1.1-Trichloroethane (TCA) ((1 ug/l, estimated) at 67.5 ft. and tetrachloroethene (PCE) (4 ug/l estimated) at 120 ft. below grade. There were no VOCs detected at 75 ft., 82.5 ft, 90ft, 97.5 ft, 105 ft, and 112.5 ft. below grade at ML-3.

The downgradient multi-level well locations ML-1 and ML-2 had detected concentrations of VOCs at various depths. The concentration of contaminants detected at ML-1 ranged from 400 ppb of trichloroethene (TCE) at the 75 depth to an estimated concentration of 1 ppb of TCE and PCE at the 112.5 ft. depth. The highest concentration of contaminants was detected at the 75 ft. depth for location ML-1. The concentration of contaminants detected at ML-2 ranged from 76 ppb of TCE at the 85.5 ft. depth to an estimated concentration of 5 ppb at the 138 ft. depth. The highest concentration of contaminants was detected at the 85.5 ft. depth for location ML-2.

The downgradient existing monitoring well locations W-1,W-2, and W-3 had detected concentrations of VOCs at all three locations. The highest concentrations of contaminants were detected at W-2 as

GLARO, INCORPORATED SITE (1-52-124)

SUMMARY OF GROUND WATER INVESTIGATION RESULTS - SHALLOW WELLS

TABLE 6.2

Sampling Point / Sampling Date	Vinyl Chloride	Chloro-ethane	1,1-DCE	Methylene Chloride	1,2-DCE	1,1 DCA	Chloroform	1,1,1 TCA	TCE	1,1,2 TCA	PCE
VOCs (ppb or ug/kg)											
W-1 12/11/86	ND	ND	28	5	1900	5	ND	1200	11000	ND	4400
08/10/94	ND	10	20	ND	1300	45	ND	390	2900	ND	2100
07/30/96	3J	28	21	1J	1200	54	7J	240J	2400	2J	2200
6 Well Purges 02/13/97	NA	NA	NA	NA	1353	NA	NA	340	2972	NA	2681
8 Well Purges 02/13/97	NA	NA	NA	NA	1413	NA	NA	344	3156	NA	2938
10 Well Purges 02/13/97	NA	NA	NA	NA	1732	NA	NA	388	3583	NA	3524
W-2 12/11/86	ND	ND	25	4	2100	50	ND	1100	11000	ND	3900
08/10/94	ND	12	24	2	2000	46	ND	400	3700	ND	2400
07/30/96	4J	21	23	1J	2100	57	6J	290J	4300	2J	3000
6 Well Purges 02/13/97	NA	NA	NA	NA	3490	NA	NA	510	7017	NA	5279
8 Well Purges 02/13/97	NA	NA	NA	NA	2872	NA	NA	474	6592	NA	4983
10 Well Purges 02/13/97	NA	NA	NA	NA	3058	NA	NA	540	7770	NA	5360
W-3 12/11/86	ND	ND	15	ND	890	11	2	340	2100	ND	8900
08/10/94	ND	ND	10	ND	200	10	ND	140	730	ND	630
07/30/96	ND	1J	3J	ND	62	5J	ND	43	190	ND	230
W-4 08/10/94	ND	ND	ND	ND	3	17	ND	16	1	ND	<1
W-5 08/10/94	ND	ND	4	ND	2	10	ND	64	30	ND	100

J=Estimated Value, tentatively identified and quantified less than lower detection limit
ND= Non-Detect
< = Less Than
>=Greater Than
NA = Not Available

GLARO, INCORPORATED SITE (1-52-124)

SUMMARY OF GROUND WATER INVESTIGATION RESULTS - MULTILEVEL WELLS

TABLE 6.2A

Sampling Point Sampling Date	Sample Depth(ft)	Chloro-ethane	1,1-DCE	1,2-DCE	1,1 DCA	1,1,1 TCA	TCE	PCE
VOCs (ppb or ug/kg)								
07/25/96								
ML-1B	112.5	<10	<10	<10	<10	<10	1J	1J
ML-1C	105.0	<10	<10	2J	<10	3J	7J	8J
ML-1D	97.5	<10	<10	1J	<10	1J	2J	2J
ML-1E	90.0	<10	<10	2J	<10	3J	6J	7J
ML-1F	82.5	<10	<10	3J	<10	3J	6J	6J
ML-1G	75.0	5J	3J	230	9J	43	400	180
ML-2A	138.0	<10	<10	<10	<10	2J	<10	5J
ML-2B	130.5	<10	<10	<10	<10	<10	1J	2J
ML-2C	123.0	<10	<10	<10	<10	1J	2J	3J
ML-2D	115.5	<10	<10	<10	<10	<10	<10	<10
07/26/96								
ML-2E	108.0	<10	<10	<10	<10	<10	2J	2J
ML-2F	100.5	<10	<10	8J	<10	4J	12	12
ML-2G	93.0	<10	<10	14	<10	3J	18	8J
ML-2H	85.5	1J	1J	67	3J	15	76	27
ML-3A	120.0	<10	<10	<10	<10	<10	<10	4J
ML-3B	112.5	<10	<10	<10	<10	<10	<10	<10
ML-3C	105.0	<10	<10	<10	<10	<10	<10	<10
ML-3D	97.5	<10	<10	<10	<10	<10	<10	<10
ML-3E	90.0	<10	<10	<10	<10	<10	<10	<10
ML-3F	82.5	<10	<10	<10	<10	<10	<10	<10
ML-3G	75.0	<10	<10	<10	<10	<10	<10	<10
ML-3H	67.5	<10	<10	<10	<10	1J	<10	<10

J=Estimated Value, tentatively identified and quantified less than lower detection limit
<= Less Than
>=Greater Than

TCE at 4300 ppb,PCE at 3000 ppb and 1,2-Dichloroethene at 2100 ppb. Similar, but somewhat lower concentrations of contaminants were detected at W-1 as TCE at 2400 ppb, PCE at 2200 ppb,and 1,2-Dichloroethene at 1200 ppb. The highest detected concentrations of contaminants at W-3 were PCE at 230 ppb, TCE at 190 ppb and 1,2-Dichloroethene at 62 ppb.

6.3 Soil Gas Results

Table 6.3 provides a summary of the data regarding soil gas samples. The results indicate that highest concentrations of target compounds i.e. TCE, PCE, vinylchloride, dichloroethylene, and TCA, were detected in the source area (SP-1,SP-2) and generally at the uppermost sampling depth (20 ft). The results also indicate a trend in decreasing concentrations of the target compounds in the direction of groundwater flow to the northeast. The concentration of target compounds at the easterly property line of the site were less than 6 ppm for any individual target compound at the 20 and 40 ft. sampling points.

GLARO, INCORPORATED SITE (1-52-124)

SUMMARY OF SOIL GAS INVESTIGATION RESULTS

TABLE 6.3

Sampling Point Date	Sample Depth(ft)	Vinyl Chloride	DCE	TCA	TCE	PCE	Photo Ionization Detector
VOCs (ppm or mg/kg)							
06/03/96							
SP-1A*	20.0	1.926	12.1	35.9	>500E	>1000E	2760.0
SP-1B	40.0	0.287	69.5	19.2	362.2	738.8	1460.0
SP-1C	52.0	1.400	99.4	45.8	155.2	334.0	981.0
06/04/96							
SP-2A	22.0	6.160	160.6	67.8	890.1	713.9	2945.0
SP-2B	44.0	0.658	57.4	31.8	123.7	209.9	1146.0
SP-3A	22.0	1.720	22.3	12.9	101.5	35.6	619.0
SP-4A*	22.0	0.596	0.196	<1.0	0.827	0.626	20.0
SP-5A	22.0	N/A	<0.1	<1.0	0.2	0.3	20.2
SP-6A	22.0	0.491	9.6	9.5	37.1	42.0	271.0
SP-6B	44.0	0.703	25.9	12.3	117.6	115.4	495.0
06/05/96							
SP-7A	22.0	0.875	9.1	19.8	68.3	80.0	117.0
SP-7B	44.0	0.734	26.4	25.4	91.5	103.5	361.0
SP-8B*	44.0	0.805	11.8	26.0	79.3	89.7	292.0
SP-9A	22.0	0.805	6.6	12.5	48.8	48.8	202.0
SP-9B	41.0	1.016	6.0	9.4	48.8	40.5	171.0
SP-10A	22.0	<0.1	<0.1	<1.0	0.6	1.8	18.9
SP-10B	44.0	<0.1	<0.1	1.1	3.1	5.8	23.6
SP-11A	22.0	0.381	0.6	3.3	12.8	11.7	71.0

E = Estimated
ND = Non-Detect
* = QA/QC Tenax Sample to Offsite Lab
NA = Not Able to Quantify
< =Less Than
> = Greater Than

SECTION 7.0

CONCLUSION AND RECOMENDATIONS

The following conclusions can be made following the remedial investigation report:

The soil gas investigation indicated that the highest concentrations of the target compounds i.e. vinyl chloride, dichloroethane (DCA), 1,1,1 trichloroethane (TCA), trichloroethene (TCE), and tetrachloroethene (PCE), were detected in the source area (SP-1 and SP-2) and generally in the uppermost sampling depth of 20 feet.

The investigation also indicated that these concentrations decreased in the direction of groundwater flow with distance from the source area. These results, however, were not conclusive in determining the extent of soil contamination due to asphalted surfaces downgradient of the source area which confined the vapors.

The soil sampling investigation identified only one contaminant above standards and was located at the source area (SB-1). Cis-1,2 dichloroethene (cis-1,2 DCE) was detected at 1,800 ppb at the 5'to 7' interval. The standard for cis-1,2 DCE is 250 ppb.

The groundwater investigation found the groundwater beneath

the site to be contaminated with chlorinated volatile organics. The highest concentrations of contaminents were detected in the shallow monitoring wells W1 and W2 and contained 290 ppb of TCA, 4300 ppb of TCE, 3000 ppb of PCE, 2100 ppb of 1,2 DCE (total), 57 ppb of 1,1, DCE as well as trace amounts of vinyl chlloride and 1,1,2 trichloroethane. The concentrations of contaminants at the propertyline downgradient from the source area decreased significantly with concentrations of TCE at 76 ppb, 1,2 DCE at 67 ppb and PCE at 27ppb. Additional groundwater sampling was performed by the NYSDEC for the shallow groundwater monitoring wells W1 and W2. The contaminant levels obtained from this sampling event were similar to those detected previously.

A number of alternatives were considered for the remedy of the conditions identified at the project site. These alternatives included: 1. No action with Long-Term Monitoring; 2. Air Sparging and Soil Vapor Extraction; and 3. Limited Pump Treatment System. The recommended alternative selected for this site was the Air Sparging and Soil Vapor Extration System. This alternative will result in a more expedient and more complete remediation of the site and at a lower cost. The remediation will focus on the source area. Treating the soil source area and the contaminated

groundwater beneath the source will remove significant amounts of contaminants from the source area and the underlying groundwater, and reduce the migration of the contaminant plume via groundwater. The soil vapor extraction system will reduce the level of contamination in the soil significantly and prevent further contamination of the groundwater. Preliminary estimates indicate that the remediation goals could be attained within two years.

Appendicies

Appendix A
"Groundwater Investigation Report", KES, 1994

Kost Environmental Services, Inc.

167 North Broadway
Lindenhurst, New York 11757
(516) 226-2156 Fax (516) 957-0646

GROUNDWATER INVESTIGATION

AT

735 Old Willets Path
Hauppauge, New York

September, 1994

PREPARED FOR: Glaro, Inc.
735 Old Willets Path
Hauppauge, New York 11788

PREPARED BY: Kost Environmental Services, Inc.
167 N. Broadway
Lindenhurst, New York 11757

Kost Environmental Services, Inc.

167 North Broadway
Lindenhurst, New York 11757
(516) 226-2156 Fax (516) 957-0646

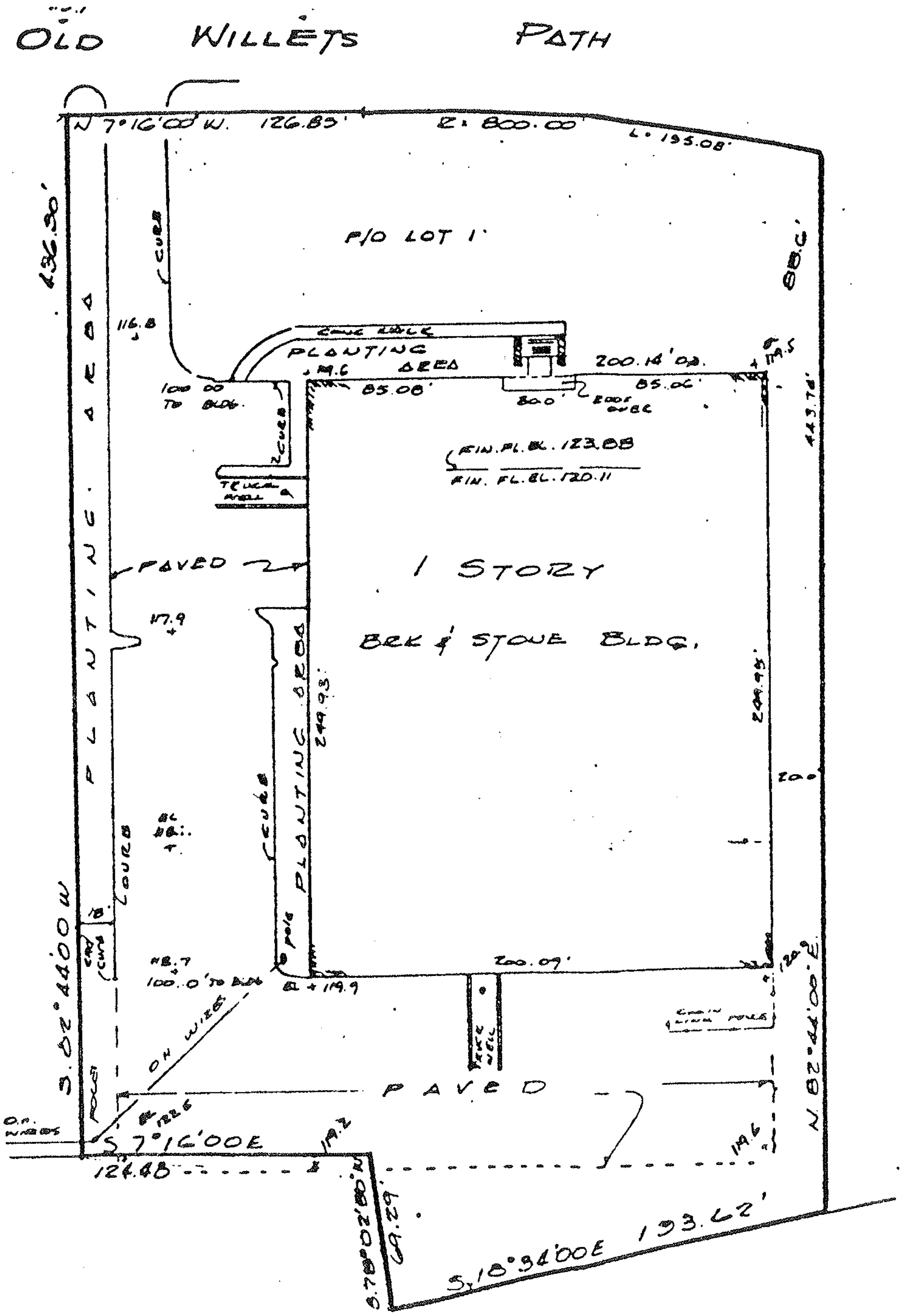
TABLE OF CONTENTS

BACKGROUND AND OBJECTIVES

This report presents the results of a groundwater investigation conducted at Glaro, Inc. located at 735 Old Willets Path in Hauppauge, New York. (Figure I). The subject site is presently listed on the New York State Department of Environmental Conservations "Inactive Hazardous Waste Disposal Sites in New York State", April, 1994, due to discharges of tetrachloroethylene and other solvents. However, there are also documented additional sources of discharges of tetrachloroethylene and other solvents in the immediate area surrounding the Glaro site.

The objectives of this project were to evaluate the impacts to the groundwater by:

- Installing and observing the installation and development of two monitoring wells within the Glaro property limits adjacent to "suspected" sources of chlorinated hydrocarbon contamination.
- Sampling and analysis of groundwater samples from all monitoring wells on the Glaro site to evaluate contaminant concentrations.
- Establishing groundwater flow conditions at the site to evaluate potential off-site sources of contamination.



OLD WILLETS PATH
N 7°16'00"W. 126.85'
R= 800.00
L= 195.08'
P/O LOT 1
PLANTING AREA
PLANTING AREA
PLANTING AREA
CURB
200.14' OA.
85.08'
85.06'
FIN. FL. EL. 123.88
FIN. FL. EL. 120.11
PAVED
1 STORY
BRK & STONE BLDG.
249.93'
200.09'
PAVED
S 7°16'00E
124.48
S 82°44'00"W
N 82°44'00"E
S 18°34'00E 193.62'

FIGURE 1

FIELD INVESTIGATION

Well Installation

On August 1 and August 2, 1994 KES observed the installation of two monitoring wells (Figure 2). The two wells were installed at the following locations: (1) on the southwest sector of the Glaro property between existing monitoring wells that were located on the Savoy property and monitoring wells W-1 and W-2 that were located on the Glaro property (W-4); and (2) on the southeast sector of the Glaro property between the AFTA property and monitoring well W-3 that was located on the Glaro property (W-5). The drilling and well installation was performed by Land, Air, Water Environmental Services, Inc. of Center Moriches, New York.

Pilot borings for the wells were conducted using 6.25 in. inside diameter (I.D.) hollow-stem augers. Soils encountered consisted of medium to fine white sand with gravel. The underlying native materials are classified as well drained, medium textured and moderately textured soils, which typically consist of sands and gravels. Groundwater was encountered at a depth of approximately 72 feet below grade.

There were no petroleum or solvent type odors detected from soil cuttings, both above and below the water table. Volatile organic vapors were not detected with a Photovac model photoionization detector (PID) for the soil cuttings or for a split-spoon soil sample which was taken at the groundwater interface. No soil staining or groundwater sheens were observed.

The monitoring wells were constructed of 4 in. diameter PVC riser and 20 ft. lengths of 20 slot (0.020 in.) PVC well screen. The screens were installed approximately 10 ft. into the water table. Filter packs were constructed of No. 1 Morie sand and installed to approximately 2 ft. above the top of the screen. Approximately 1 to 2 ft. of bentonite pellets were emplaced above the filter packs and hydrated. The wells were sealed with a portland cement/bentonite grout mixture

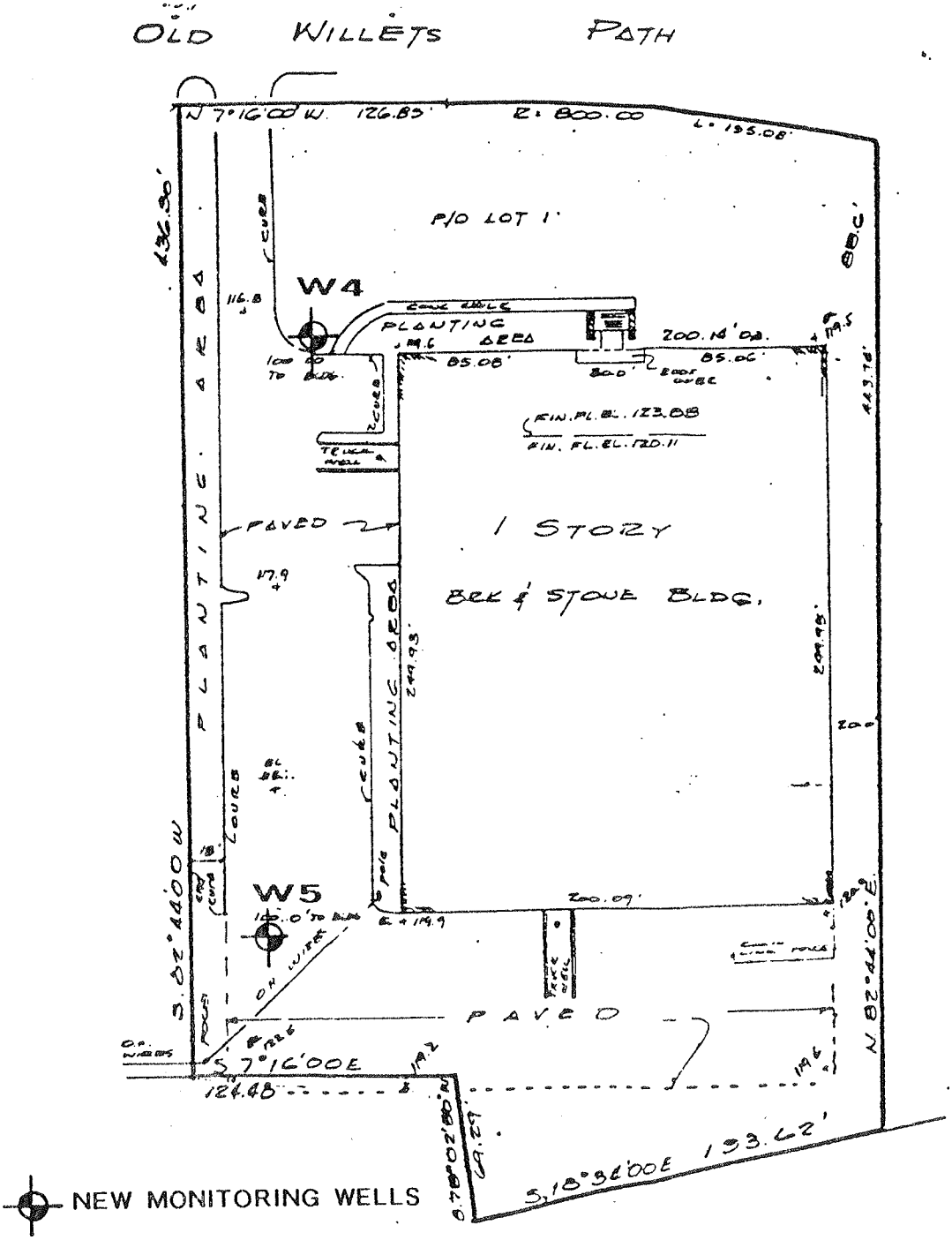

OLD WILLETS PATH
N 7°16'00 W. 126.83'
R. 800.00
L. 135.08'
P/O LOT 1
W4
PLANTING AREA
FIN. FL. EL. 123.08
FIN. FL. EL. 120.11
1 STORY
BRK & STONE BLDG.
PAVED
PLANTING AREA
W5
PAVED
S 7°16'00E
124.48'
S 18°36'00E 193.62'
N 82°44'00 E
S 82°44'00 W
NEW MONITORING WELLS

FIGURE 2

Well Installation

and completed with flush-mounted protective casings. Each well was fitted with a swelling well cap and lock. Both wells were measured for total depth and static water levels were measured and recorded. (Table I).

Well Development

The two monitoring wells were developed by Land, Air, Water Environmental Services, Inc. on August 2, 1994. Well development was observed by KES. The wells were developed by surging and evacuating inflowing groundwater using an electric powered submersible pump. Water levels were collected using a groundwater interface probe before each well was developed. No sheens or water discoloration were noted during well development. Groundwater was pumped from each well for approximately 30 minutes resulting in clear and silt-free water.

Groundwater Monitoring Well Sampling

The two newly installed monitoring wells (W-4 and W-5) and the three existing monitoring wells (W-1, W-2, W-3) were sampled by Land, Air, Water Environmental Services, Inc. on August 10, 1994. Prior to sampling the monitoring wells were measured for depth to water. The interface probe was decontaminated with detergent and distilled water after each measurement.

Five well volumes were purged from each well with a submersible pump using new dedicated polyethylene tubing. The submersible pump was decontaminated with detergent and distilled water after each measurement.

Groundwater samples were preserved on ice and delivered to EcoTest Laboratories, Inc., in North Babylon, New York, for analysis on the same day as sampling.

TABLE 1

WATER LEVEL MEASUREMENTS

MONITORING WELLS	MEASUREMENT DATE	WELL DEPTH	DEPTH TO WATER
W4	8/1/94	84.40	72.35
W5	8/2/94	85.10	73.34

FIELD INVESTIGATION CONT.

Groundwater Monitoring Well Sampling

Monitoring wells W-1, W-2, W-3, W-4 and W-5 were analyzed for VOC's (EPA Method 601, 602).

Field Survey and Groundwater Contours

On September 1, 1994, the five monitoring wells on the Glaro property and two monitoring wells on the Savoy property were surveyed for elevation and depth to groundwater. The monitoring wells were surveyed on the north side of the casing and measured to groundwater from the same point. The depths to groundwater varied between 68.42 ft. and 73.34 ft.

Groundwater contours were then developed utilizing a topographic survey of the area and the calculated groundwater elevations. (Figure 3)

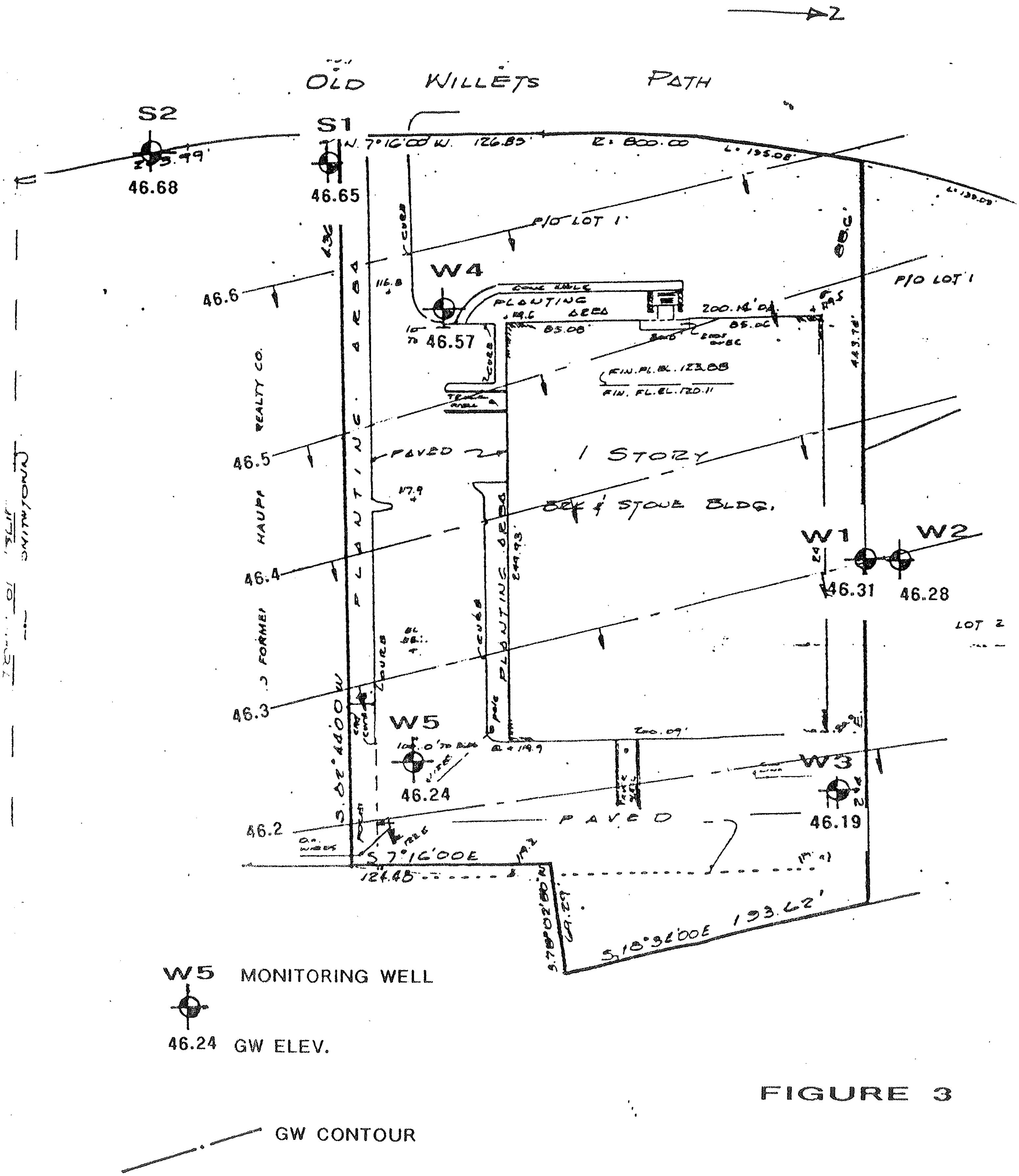

OLD WILLETS PATH
S2
46.68
S1
46.65
N. 7°16'00" W. 126.83
R = 800.00
P/O LOT 1
P/O LOT 1
W4
46.57
PLANTING AREA
FIN. FL. EL. 123.08
FIN. FL. EL. 120.11
1 STORY
BRK & STONE BLDG.
PAVED
PLANTING AREA
REALTY CO.
HAUPT
FORMER
W1
46.31
W2
46.28
LOT 2
W5
46.24
W3
46.19
PAVED
46.6
46.5
46.4
46.3
46.2
S.82°44'00"W
S.7°16'00"E
124.48
S.18°32'00"E 193.62'
W5 MONITORING WELL
46.24 GW ELEV.
GW CONTOUR

FIGURE 3

TABLE #2

GROUNDWATER ANALYSIS (ppb)

	W-1	W-2	W-3	W-4	W-5	G.W. STD.
Chloroethane	10	12	---	---	---	5
1,1 Dichlorethene	20	24	10	---	4	5
1,1 Dichloroethane	45	46	10	17	10	5
1,2 Dichloroethene	1300	2000	200	3	2	5
1,1,1 Trichloroethane	390	400	140	16	64	5
Trichloroethylene	2900	3700	730	1	30	5
Tetrachloroethene	2100	2400	630	<1	100	5
Methylene Chloride	---	2	---	---	---	5

RESULTS

Results of the sample analyses indicate that chlorinated hydrocarbon compounds were detected in all five monitoring wells (Table 2). Total concentrations in wells Mw-2 and MW-1 were the highest, 8582 ppb and 6765 ppb, respectively and concentrations in W-4 and W-5 were the lowest, 37 ppb and 210 ppb, respectively. The highest concentration of a specific chlorinated hydrocarbon compound was 3700 ppb of trichlorethylene which was detected in W-2. Concentrations of compounds that were in excess of the NYSDEC Class GA Groundwater Standards were:

	W-1	W-2	W-3	W-4	W-5
Chloroethane	X	X			
1,1 Dichloroethane	X	X	X		
1,1 Dichloroethene	X	X	X	X	X
1,2 Dichloroethene	X	X	X		
111 Trichloroethane	X	X	X	X	X
Trichloroethylene	X	X	X		X
Tetrachloroethene	X	X	X		X

Results of the groundwater contour determination indicates that groundwater flows in a northeast direction with respect to the subject site. The hydraulic gradient was established at 0.001 ft/ft.

CONCLUSIONS

The analytical results for groundwater samples from the wells located on the subject site indicate the presence of chlorinated hydrocarbons in all five wells at concentrations above NYSDEC Class GA groundwater standards. The highest concentrations were detected in wells MW-2, MW-1 and MW-3 respectively. These wells are located to the northeast of previously utilized on-site leaching basins. The concentrations of chlorinated hydrocarbons were significantly lower in wells MW-4 and MW-5 but cannot be attributed to any operations performed on the subject property. The contamination detected in wells W-4 and W-5 is a result of off-site sources that have impacted the Glaro property through the migration of groundwater.

The installation of additional monitoring wells and additional groundwater sampling would be required in order to define the off-site source(s) and contaminant plume(s).

DRILLING LOGS

LAND, AIR, WATER
ENVIRONMENTAL SERVICES, INC.

16 COZINE ROAD PO BOX 372 CENTER MORICHES, NY 11934 (516) 874-2112 FAX (516) 874-4547

DRILLER'S LOGS

SITE: Glaro
735 Caleb's Path
Hauppauge, New York

DATE: August, 1994

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOG

Well #1 (MW-4)

Site Location: Glaro
735 Caleb's Path
Hauppauge, N.Y.

Client: Kost Environmental
167 North Broadway
Lindenhurst, N.Y.

Date: 08/01/94
Total Depth Drilled: 85 ft.
Casing Installed: 65 ft.
Screen Installed: 20 ft.
Well Grouted: yes
Drilling Fluid Used: none
Hammer Weight: 140 lbs.
Driller: K. McGourty

Depth to Water: 75 ft.
Casing Diameter: 4 in. PVC
Slot Size: .020
Size of Coring Device: 2 in x 24 in
Drilling Method: h/s auger 6 5/8"
Hammer Drop: 30 in.
Driller's Helper: S. Pedersen
C. O'Shea

DEPTH FROM	TO	CORE RECOVERY	BLOWS/ 6 INCHES	SAMPLE DESCRIPTION
0'	4'	-	HAND	8" Topsoil, Brown/white sand, medium to fine, 10% gravel
4'	15'	-	A/C	White sand, medium to fine, 10% gravel
15'	25'	-	A/C	White sand, medium to fine, 10% gravel
25'	30'	-	A/C	Brown sand, medium to fine, 50% gravel
30'	40'	-	A/C	Brown sand, medium to fine, 30% gravel
40'	50'	-	A/C	White sand, medium to fine, 15% gravel
50'	75'	-	A/C	White sand, medium to fine, 10% gravel
75'	77'	-	15-19-22-27	White sand, medium to fine, 10% gravel, wet, (SP)
77'	85'	-	A/C	White sand, medium to fine, 10% gravel, wet

A/C - Auger cuttings

Land, Air, Water Environmental Services, Inc.

DRILLER'S LOG

Well #2 (MW-5)

Site Location: Glaro
735 Caleb's Path
Hauppauge, N.Y.

Client: Kost Environmental
167 North Broadway
Lindenhurst, N.Y.

Date: 08/02/94
Total Depth Drilled: 86 ft.
Casing Installed: 65 ft.
Screen Installed: 20 ft.
Well Grouted: yes
Drilling Fluid Used: none
Hammer Weight: 140 lbs.
Driller: K. McGourty

Depth to Water: 74 ft.
Casing Diameter: 4 in. PVC
Slot Size: .020
Size of Coring Device: 2 in x 24 in
Drilling Method: h/s auger 6 5/8"
Hammer Drop: 30 in.
Driller's Helper: S. Pedersen
C. O'Shea

DEPTH FROM	TO	CORE RECOVERY	BLOWS/ 6 INCHES	SAMPLE DESCRIPTION
0'	4'	-	HAND	6" Asphalt, Brown sand, coarse to medium, 30% gravel
4'	20'	-	A/C	Tan sand, medium to fine, 15% gravel
20'	35'	-	A/C	Tan sand, medium to fine, 10% gravel
35'	45'	-	A/C	Tan sand, medium to fine, 30% gravel
45'	74'	-	A/C	Tan sand, medium to fine, 15% gravel
74'	76'	15"	11-14-17-21	Tan sand, medium to fine, 10% gravel, wet, (SP)
76'	86'	-	A/C	Tan sand, medium to fine, 10% gravel, wet

A/C - Auger cuttings

LABORATORY RESULTS

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/1 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, MW1, 11:50 am

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<5
Bromomethane	ug/L	<5
Dichlordifluomethane	ug/L	<10
Vinyl Chloride	ug/L	<5
Chloroethane	ug/L	10
Methylene Chloride	ug/L	<5
Trichlorofluomethane	ug/L	<10
1,1 Dichloroethene	ug/L	20
1,1 Dichloroethane	ug/L	45
1,2 Dichloroethene	ug/L	1300
Chloroform	ug/L	<5
1,2 Dichloroethane	ug/L	<5
111 Trichloroethane	ug/L	390
Carbon Tetrachloride	ug/L	<5
Bromodichloromethane	ug/L	<5
1,2 Dichloropropane	ug/L	<5
t-1,3Dichloropropene	ug/L	<10
Trichloroethylene	ug/L	2900
Chlorodibromomethane	ug/L	<5
112 Trichloroethane	ug/L	<10
c 13 Dichloropropene	ug/L	<10
2chloroethvinylether	ug/L	<10
Bromoform	ug/L	<10
1122Tetrachloroethan	ug/L	<10
Tetrachloroethene	ug/L	2100

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<5
1,3 Dichlorobenzene	ug/L	<10
1,2 Dichlorobenzene	ug/L	<10
1,4 Dichlorobenzene	ug/L	<10
Benzene	ug/L	<5
Toluene	ug/L	<10
Ethyl Benzene	ug/L	<5
m Xylene	ug/L	<10
o+p Xylene	ug/L	<20

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17568 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/2 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, MW2, 11:00 am

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<2
Bromomethane	ug/L	<2
Dichlordifluomethane	ug/L	<4
Vinyl Chloride	ug/L	<2
Chloroethane	ug/L	12
Methylene Chloride	ug/L	2
Trichlorofluomethane	ug/L	<4
1,1 Dichloroethene	ug/L	24
1,1 Dichloroethane	ug/L	46
1,2 Dichloroethene	ug/L	2000
Chloroform	ug/L	<2
1,2 Dichloroethane	ug/L	<2
111 Trichloroethane	ug/L	400
Carbon Tetrachloride	ug/L	<2
Bromodichloromethane	ug/L	<2
1,2 Dichloropropane	ug/L	<2
t-1,3Dichloropropene	ug/L	<4
Trichloroethylene	ug/L	3700
Chlorodibromomethane	ug/L	<2
112 Trichloroethane	ug/L	<4
c 13 Dichloropropene	ug/L	<4
2chloroethvinylether	ug/L	<4
Bromoform	ug/L	<4
1122Tetrachloroethan	ug/L	<4
Tetrachloroethene	ug/L	2400

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<2
1,3 Dichlorobenzene	ug/L	<4
1,2 Dichlorobenzene	ug/L	<4
1,4 Dichlorobenzene	ug/L	<4
Benzene	ug/L	<2
Toluene	ug/L	<4
Ethyl Benzene	ug/L	<2
m Xylene	ug/L	<4
o+p Xylene	ug/L	<8

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17569 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/3 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, MW3, 10:20 am

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<2
Bromomethane	ug/L	<2
Dichlordifluomethane	ug/L	<4
Vinyl Chloride	ug/L	<2
Chloroethane	ug/L	<2
Methylene Chloride	ug/L	<2
Trichlorofluomethane	ug/L	<4
1,1 Dichloroethene	ug/L	10
1,1 Dichloroethane	ug/L	10
1,2 Dichloroethene	ug/L	200
Chloroform	ug/L	<2
1,2 Dichloroethane	ug/L	<2
111 Trichloroethane	ug/L	140
Carbon Tetrachloride	ug/L	<2
Bromodichloromethane	ug/L	<2
1,2 Dichloropropane	ug/L	<2
t-1,3Dichloropropene	ug/L	<4
Trichloroethylene	ug/L	730
Chlorodibromomethane	ug/L	<2
112 Trichloroethane	ug/L	<4
c 13 Dichloropropene	ug/L	<4
2chloroethvinylether	ug/L	<4
Bromoform	ug/L	<4
1122Tetrachloroethan	ug/L	<4
Tetrachloroethene	ug/L	630

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<2
1,3 Dichlorobenzene	ug/L	<4
1,2 Dichlorobenzene	ug/L	<4
1,4 Dichlorobenzene	ug/L	<4
Benzene	ug/L	<2
Toluene	ug/L	<4
Ethyl Benzene	ug/L	<2
m Xylene	ug/L	<4
o+p Xylene	ug/L	<8

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17570 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/4 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, MW4, 9:55 am

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	17
1,2 Dichloroethene	ug/L	3
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	16
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t-1,3Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17571 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/5

08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, MW5, 9:20 am

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	4
1,1 Dichloroethane	ug/L	10
1,2 Dichloroethene	ug/L	2
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	64
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t-1,3Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	30
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	100

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17572 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/6 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, Trip Blank, 10:35

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t-1,3Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17573 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO.C943511/7 08/17/94

Kost, Darrel
167 North Broadway
Lindenhurst, NY 11757

ATTN:

SOURCE OF SAMPLE: Glaro, Hauppauge
COLLECTED BY: Client DATE COL'D:08/10/94 RECEIVED:08/10/94

SAMPLE: Water sample, Field Blank

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Bromomethane	ug/L	<1
Dichlordifluomethane	ug/L	<2
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Trichlorofluomethane	ug/L	<2
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
t-1,3Dichloropropene	ug/L	<2
Trichloroethylene	ug/L	<1
Chlorodibromomethane	ug/L	<1
112 Trichloroethane	ug/L	<2
c 13 Dichloropropene	ug/L	<2
2chloroethvinylether	ug/L	<2
Bromoform	ug/L	<2
1122Tetrachloroethan	ug/L	<2
Tetrachloroethene	ug/L	<1

ANALYTICAL PARAMETERS		
Chlorobenzene	ug/L	<1
1,3 Dichlorobenzene	ug/L	<2
1,2 Dichlorobenzene	ug/L	<2
1,4 Dichlorobenzene	ug/L	<2
Benzene	ug/L	<1
Toluene	ug/L	<2
Ethyl Benzene	ug/L	<1
m Xylene	ug/L	<2
o+p Xylene	ug/L	<4

cc:John Lamprecht, LAWES

REMARKS:

DIRECTOR

rn= 17574 NYSDOH ID# 10320

ENVIRONMENTAL SERVICES INC
P.O. BOX 372 ... CENTER MORICHES, N.Y. 11934-0372

CCi

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
N/A	Claro Hauppauge

SAMPLERS: C Haupreich / J Reuen

SAMPLE	DATE	TIME	BOIL	AQ.	SAMPLE LOCATION	NO. OF CONTAINERS	VOA	REMARKS
1	8/10	1130		✓	MW 1	2	✓	EPA 601
2	8/10	1100		✓	MW 2	2	✓	EPA 602
3	8/10	1020		✓	MW 3	2	✓	
4	8/10	9:55		✓	MW 4	2	✓	
5	8/10	9:20		✓	MW 5	2	✓	
6	8/10			✓	Field Blank ⓒ	2	✓	
7	8/11			✓	Trip Blank ⓒ	2	✓	

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	8/10/94	Ciena Marie ...			

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Post-it™ brand fax transmittal memo 7671 | # of pages ▸
To Stella | From C Haupreich
Co. Ecotest | Co. AWS
Dept. As requested | Phone #
Fax # 422-5770 | Fax #

Appendix B
Field Reports/Borings

BORING LOG

C ENT: Glaro Inc.	BORING: ML-1
PROJECT NAME: Glaro - Hauppauge	
L CATION: 735 Old Willets Path, Hauppauge, NY	
DEC SITE#: 1-52-124	SPILL#: DATE: June 18, 1996

D LLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
WATER TABLE: ~70'	COMMENTS: Located in parking lot between Glaro and Avnet		
D ILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Auger Cuttings	E.O.B.: 120'

MULTI-LEVEL WELL CONSTRUCTION (e page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL: @65' & 5' below grade.		
	FLUSH BOX: yes		LOCKING CAP: yes	SURFACE SEAL: 2' x2' cement pad	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
0	15'	Post Hole/Auger Cutting	Asphalt over brown silty fine sand, little gravel, trace cobble, dry		Augers steam cleaned before drilling
15'	30'	Auger Cuttings	Brown fine sand, some gravel, little silt, trace cobbles		PID @ 20': <1 ppm
30'	70'	Auger Cuttings	Brown fine sand, some fine gravel, little coarse gravel, trace cobble		
70'	90'	Auger Cuttings	Lt brown fine-med sand, some fine gravel, moist		PID @ 75': <1 ppm
90'	120'	Auger Cuttings	Lt brown med-coarse sand, some fine-med gravel, wet		PID @ 110': <1 ppm
					First attempt @ 140' failed

BORING LOG - CONTINUATION

OJECT: Glaro - Hauppauge		BORING: ML-1
LOCATION:		
N#:	SPILL#:	DATE: June 18, 1996

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
			Multi-level well construction:	----	
			10' - 2" PVC screen .02" slot	----	
			110' - 2" PVC riser	----	

			7- 1/2" x 1' screens:	----	
			A - 120'	----	
			B - 112.5'	----	
			C - 105'	----	
			D - 97.5'	----	
			E - 90'	----	
			F - 82.5'	----	
			G - 75'	----	
			"	----	
			"		

BORING LOG

CLIENT: Glaro Inc.	BORING: ML-2
PROJECT NAME: Glaro - Hauppauge	
LOCATION: 735 Old Willets Path, Hauppauge, NY	
DEC SITE#: 1-52-124 / SPILL#:	DATE: June 13, 1996

DRILLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
WATER TABLE: ~70'	COMMENTS: Located along Powers Dr., between Glaro and Avnet		
DRILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Auger Cuttings	E.O.B.: 140'

MULTI-LEVEL WELL CONSTRUCTION (see page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL: @60' & 5' below grade.		
	FLUSH BOX: yes		LOCKING CAP: yes	SURFACE SEAL: 2' x2' cement pad	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
0	3'	Post Hole	Grass over brown silty fine sand, little clay, trace gravel		
3'	20'	Auger Cuttings	Brown silty fine sand, little gravel		
20'	30'	Auger Cuttings	Brown fine sand, little silt, little gravel		
30'	50'	Auger Cuttings	Brown fine sand, some gravel, trace cobble, cobble layer @35'-37'		PID @ 30': <1 ppm
50'	60'	Auger Cuttings	Brown fine sand, some fine gravel, trace cobble, moist		PID @ 50': <1 ppm
60'	70'	Auger Cuttings	Brown fine sand, some fine-med gravel, moist		PID @ 60': <1 ppm
70'	80'	Auger Cuttings	Lt brown fine sand, some fine-med gravel, moist		
80'	90'	Auger Cuttings	Lt brown fine-coarse sand, some fine gravel		
90'	110'	Auger Cuttings	Tan fine-coarse sand, little fine gravel		
110'	140'	Auger Cuttings	Tan med-coarse sand, some fine gravel		PID @ 110': <1 ppm
					Well set @ 138'

BORING LOG - CONTINUATION

OJECT: Glaro - Hauppauge | BORING: ML-2

LOCATION:

PIN#: | SPILL#: | DATE: June 13, 1996

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
			Multi-level well construction:	----	
			5' - 2" PVC screen .02" slot	----	
			133' - 2" PVC riser	----	
				----	
			8 - 1/2" x 1' screens	----	
			A - 138'	----	
			B - 130.5'	----	
			C - 123'	----	
			D - 115.5'	----	
			E - 108'	----	
			F - 100.5	----	
			G - 93'	----	
			H - 85.5'	----	

BORING LOG

IENT: Glaro Inc.	BORING: ML-3
..OJECT NAME: Glaro - Hauppauge	
LOCATION: 735 Old Willets Path, Hauppauge, NY	
:C SITE#: 1-52-124 / SPILL#:	DATE: June 19, 1996

RILLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
ATER TABLE: ~60'	COMMENTS: Located 15' from curb line along Caleb's Path		
DRILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Auger Cuttings	E.O.B.: 120'

MULTI-LEVEL WELL CONSTRUCTION (see page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL: @55' & 5' below grade.		
	FLUSH BOX: yes		LOCKING CAP: yes	SURFACE SEAL: 2' x2' cement pad	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
0	1'	Post Hole	Grass over dk brown fine sand, trace gravel, moist		Augers steam cleaned before drilling
1'	5'	Post Hole	Orange fine sand, trace gravel, little silt		
5'	7'	Auger Cuttings	Tan fine sand, little fine gravel, moist		
7'	20'	Auger Cuttings	Lt brown fine sand, some gravel, little silt, trace cobble, moist		
20'	50'	Auger Cuttings	Brown fine sand, some gravel, trace cobble, moist		
50'	70'	Auger Cuttings	Lt brown fine-med sand, some gravel, trace cobble, moist		PID @ 60': <1 ppm
70'	90'	Auger Cuttings	Lt brown fine-med sand, little gravel, wet		PID @ 75': <1 ppm
90'	120'	Auger Cuttings	Tan med sand, little fine gravel, wet		PID @ 90': <1 ppm

BORING LOG - CONTINUATION

PROJECT: Glaro - Hauppauge | BORING: ML-3

CATION:

PIN#: | SPILL#: | DATE: June 19, 1996

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
			Multi-level well construction:		
			10' - 2" PVC screen .02" slot		
			110' - 2" PVC riser		
			9 - 1/2" x 1' screens:		
			A - 120'		
			B - 112.5'		
			C - 105'		
			D - 97.5'		
			E - 90'		
			F - 82.5'		
			G - 75'		
			H - 67.5'		
			I - 60'		
			"		

BORING LOG

C :NT: Glaro Inc.	BORING: SB-1
PROJECT NAME: Glaro - Hauppauge	
L :ATION: 735 Old Willets Path, Hauppauge, NY	
DEC SITE#: 1-52-124	SPILL#: DATE: June 21, 1996

D :LLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Christopher Greenlee	
WATER TABLE: ~70'	COMMENTS:Located between SP1 and SP2 - augers steam cleaned before drilling		
D LLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 6.25"	SAMPLE METHOD: Split Spoon	E.O.B.: 66'

MULTI-LEVEL WELL C NSTRUCTION ( ) page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL:		
	FLUSH BOX:		LOCKING CAP:	SURFACE SEAL:	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
1'	2'	Split Spoon	50% recovered - Dk. brown fine sand, lt. brown med sand, trace gravel		PID: <1 ppm
5'	7'	Split Spoon	80% recovered - Lt. brown med sand, dk very fine-silty sand, trace gravel		PID: <1 ppm
7'	20'	Auger Cuttings	Brown fine/med sand, some gravel		
20'	22'	Split Spoon	90% recovered - Lt brown med sand, some gravel, crushed quartz		PID: 80 ppm
22'	42'	Auger Cuttings	Brown med sand, little silt, some gravel		
42'	44'	Split Spoon	50% recovered - Lt brown fine-med sand, trace gravel		PID: 40.9 ppm
44'	64'	Auger Cuttings	Brown med sand some gravel		
64'	66'	Split Spoon	60% recovered - Lt brown/tan med sand, some fine-coarse gravel		PID: 21.2 ppm

BORING LOG

CLIENT: Glaro Inc.	BORING: SB-2
PROJECT NAME: Glaro - Hauppauge	
LOCATION: 735 Old Willets Path, Hauppauge, NY	
NYSDEC SITE#: 1-52-124	SPILL#: DATE: June 20, 1996

DRILLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
WATER TABLE: ~70'	COMMENTS: Located 7' north of ML-1		
DRILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Auger Cuttings	E.O.B.: 66'

MULTI-LEVEL WELL CONSTRUCTION (see page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL:		
	FLUSH BOX:		LOCKING CAP:	SURFACE SEAL:	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
0	20'	Auger Cuttings	Asphalt over brown silty fine sand, little gravel		Augers steam cleaned before drilling
20'	22'	Split Spoon	6" recovered - Brown silty fine sand, little gravel		PID: <1 ppm
22'	42'	Auger Cuttings	Brown silty fine sand, some gravel, trace cobble		
42'	44'	Split Spoon	8" recovered - Tan fine-med sand, some fine gravel, little coarse gravel		PID: <1 ppm
44'	64'	Auger Cuttings	Brown fine sand, some gravel		
64'	66'	Split Spoon	12" recovered - Tan/lt brown med-coarse sand, some fine gravel		PID: <1 ppm

BORING LOG

CLIENT: Glaro Inc.	BORING: SB-3
PROJECT NAME: Glaro - Hauppauge	
LOCATION: 735 Old Willets Path, Hauppauge, NY	
DEC SITE#: 1-52-124	SPILL#: DATE: June 20, 1996

DRILLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
WATER TABLE: ~70'	COMMENTS:Located 5' south of ML-2		
DRILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Auger Cuttings	E.O.B.: 66'

MULTI-LEVEL WELL CONSTRUCTION (see page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL:		
	FLUSH BOX:		LOCKING CAP:	SURFACE SEAL:	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
0	20'	Auger Cuttings	Grass over silty fine sand, little gravel		Augers steam cleaned before drilling
20'	22'	Split Spoon	12" recovered - Lt brown fine sand, some gravel		PID: <1 ppm
22'	42'	Auger Cuttings	Brown fine sand, some gravel, little silt, trace cobble		
42'	44'	Split Spoon	12" recovered - Lt brown fine-med sand, some fine gravel, little coarse gravel		PID: <1 ppm
44'	64'	Auger Cuttings	Brown fine sand, some gravel		
64'	66'	Split Spoon	12" recovered - Tan med sand, some gravel		PID: <1 ppm

BORING LOG

IENT: Glaro Inc.	BORING: SB-4
PROJECT NAME: Glaro - Hauppauge	
OCATION: 735 Old Willets Path, Hauppauge, NY	
EC SITE#: 1-52-124	SPILL#: DATE: June 20, 1996

RILLING CO.: Water Resources	DRILLER: John Barnes Jr.	LOGGED BY: Eric Lochner	
WATER TABLE: ~70'	COMMENTS:Located between MW1 and MW2 - augers steam cleaned before drilling		
RILLING METHOD: Hollow Stem Auger	BORE HOLE DIAMETER: 10"	SAMPLE METHOD: Split Spoon	E.O.B.: 66'

MULTI-LEVEL WELL CONSTRUCTION (see page 2)	SCREEN	Diameter:	LENGTH:	TYPE:	SLOT SIZE:
	RISER	Diameter:	LENGTH:	TYPE:	
	FILTER PACK: ----		BENTONITE SEAL:		
	FLUSH BOX:		LOCKING CAP:	SURFACE SEAL:	

DEPTH FROM	DEPTH TO	SAMPLE COLLECTION METHOD	DESCRIPTION/SOIL CLASSIFICATION	BLOW COUNT	REMARKS
1'	3'	Split Spoon	12" recovered - Brown fine sand, some silt, some gravel		PID: <1 ppm
5'	7'	Split Spoon	8" recovered - Tan fine-med sand, little gravel		PID: 11 ppm
7'	20'	Auger Cuttings	Brown fine sand, some silt, some gravel, trace cobble		
20'	22'	Split Spoon	10" recovered - Tan/ lt brown fine-med sand, some fine-coarse gravel.		PID: <1 ppm
22'	42'	Auger Cuttings	Brown fine sand, little silt, some gravel, trace cobble		
42'	44'	Split Spoon	12" recovered - Tan/lt brown fine-med sand, some gravel		PID: <1 ppm
44'	64'	Auger Cuttings	Brown fine sand some gravel, trace cobble		
64'	66'	Split Spoon	12" recovered - Tan/lt brown fine-med sand, some fine-coarse gravel		PID: <1 ppm

Environmental and Industrial Analytical Laboratory
575 Broad Hollow Road, Melville, N.Y. 11747-5076
(516) 694-3040
FAX: 516-694-4122

EXTERNAL CHAIN OF CUSTODY

PROJ. NO.: 1-52-129

PROJECT NAME: GLARO Inc, 735 Old Willets Path, Hauppauge, NY

SAMPLERS: (Signature)/Client: Eric Lock / Environmental Assess. & Rem. 225 Atlantic Ave Patchogue NY 11772

DELIVERABLES: ASP

Refrigerator #

SAMPLE CONTAINER DESCRIPTION → 2 oz Jar

TOTAL NO. OF CONTAINERS ↓

ANALYSIS REQUESTED

ORGANIC: VOA | BNA | Pest/PCB

INORG.: Metal | CN

NOTES:

Volatile Organics Method 8010

NYSDEC ASP B

Full deliverables

DATE	TIME	MATRIX	FIELD I.D.	TOTAL NO. OF CONTAINERS	VOA	BNA	Pest/PCB	Metal	CN	LAB I.D. No.	REMARKS
6/19/96	AM	SOIL	SB 2 20-22'	1	1						~~Metals to be tested~~
	AM		SB 2 42-44'	1	1						
	AM		SB 2 64-66'	1	1						
			SB 3 20-22	1	1						
			SB 3 42-44	1	1						
	↓		SB 3 64-66	1	1						
	AM		SB 4 0-2	1	1						
			SB 4 5-7	1	1						
			SB 4 20-22	1	1						
↓	↓	↓	SB 4 42-44	1	1						

Relinquished by: (Signature)	Date	time	Received by: (Signature)	Date	time
Richard Zak	6-19-96	1500	[signature]	6/19/96	1500
Christopher Loeber	6/21/96	1347	Eric Lock	6/19/96	PM
Eric Lock	6/20/96	PM	[signature]	6-21-96	1350

PROJECT CONTACT:

PHONE NUMBER:

Discrepancies Between Sample Labels and COC Record? Y or N

NOTES:

LABORATORY USE ONLY

Samples were:
1) Shipped ___ or Hand Delivered ___
Airbill # _____
2) Ambient or Chilled
3) Recieved In Good Condition Y or N
4) Properly Preserved Y or N
5) Samples returned to lab. ___ hours from Collection

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) COC Record Present and Complete Upon Sample Rec't. Y or N

CLIENT COPY

Environmental and Industrial Analytical Laboratory
575 Broad Hollow Road, Melville, N.Y. 11747-5076
(516) 694-3040
FAX: 516-694-4122

EXTERNAL CHAIN OF CUSTODY

PROJ. NO.: 1-52-124

PROJECT NAME: GLARO Inc, 735 Old Willetts Path, Hauppauge, NY

SAMPLERS: (Signature)/Client: Christopher Greenke / Environmental Assess & Rem, 225 Atlantic Ave, Patchogue, NY 11772

DELIVERABLES: ASP

Refrigerator #

SAMPLE CONTAINER DESCRIPTION: 2 oz Jar; 40 ml. vial

NOTES: Volatile Organics Method 8010
NYSDEC ASP B
Full deliverables

DATE	TIME	MATRIX	FIELD I.D.	TOTAL NO. OF CONTAINERS	ORGANIC: VOA	BNA	Pest/PCB	VOA				INORG.: Metal	CN	LAB I.D. No.	REMARKS
6/20/96	PM	SOIL	SB4 - 64-66	1	1										
6/21/96	AM	SOIL	SB1 - 0-2'	1	1										
6/21/96	AM	SOIL	SB1 - 5-7'	1	1										
6/21/96	AM	SOIL	SB1 - 20-22'	1	1										
6/21/96	AM	SOIL	SB1 - 42-44'	1	1										
6/21/96	AM	SOIL	SB1 - 64-66'	1	1										
6/21/96	AM	SOIL	SB1 - matrix spike	1	1										
6/21/96	AM	H_2O	Field Blank	2				2							
6/21/96	AM	H_2O	Trip Blank	2				2							
6/21/96	AM	SOIL	SB1 - matrix spike duplicate	1	1										

Relinquished by: (Signature)	Date	time	Received by: (Signature)	Date	time
[signature]	6-19-96	1500	[signature]	6/19/96	1500
Christopher Greenke	6/21/96	1346	[signature]	6/19/96	pm
[signature]	6/21/96	pm	Received for Laboratory by: (Signature) [signature]	6-21-96	1356

PROJECT CONTACT:

PHONE NUMBER:

Discrepancies Between Sample Labels and COC Record? Y or N
NOTES:

LABORATORY USE ONLY

Samples were:
1)Shipped ___ or Hand Delivered ___ Airbill # ___
2)Ambient or Chilled
3)Recieved in Good Condition Y or N
4)Properly Preserved Y or N
5)Samples returned to lab. ___ hours from Collection

COC Tape was:
1)Present on Outer Package Y or N
2)Unbroken on Outer Package Y or N
3)COC Record Present and Complete Upon Sample Rec't. Y or N

CLIENT COPY

Appendix C
Chemical Analytical Data

Please note that due to the physical size and complex nature of the laboratory reports, this data is not included with all copies of this RIFS report.

These laboratory reports, however, are on file with the NYS DEC at Wolf Road, Albany, NY.